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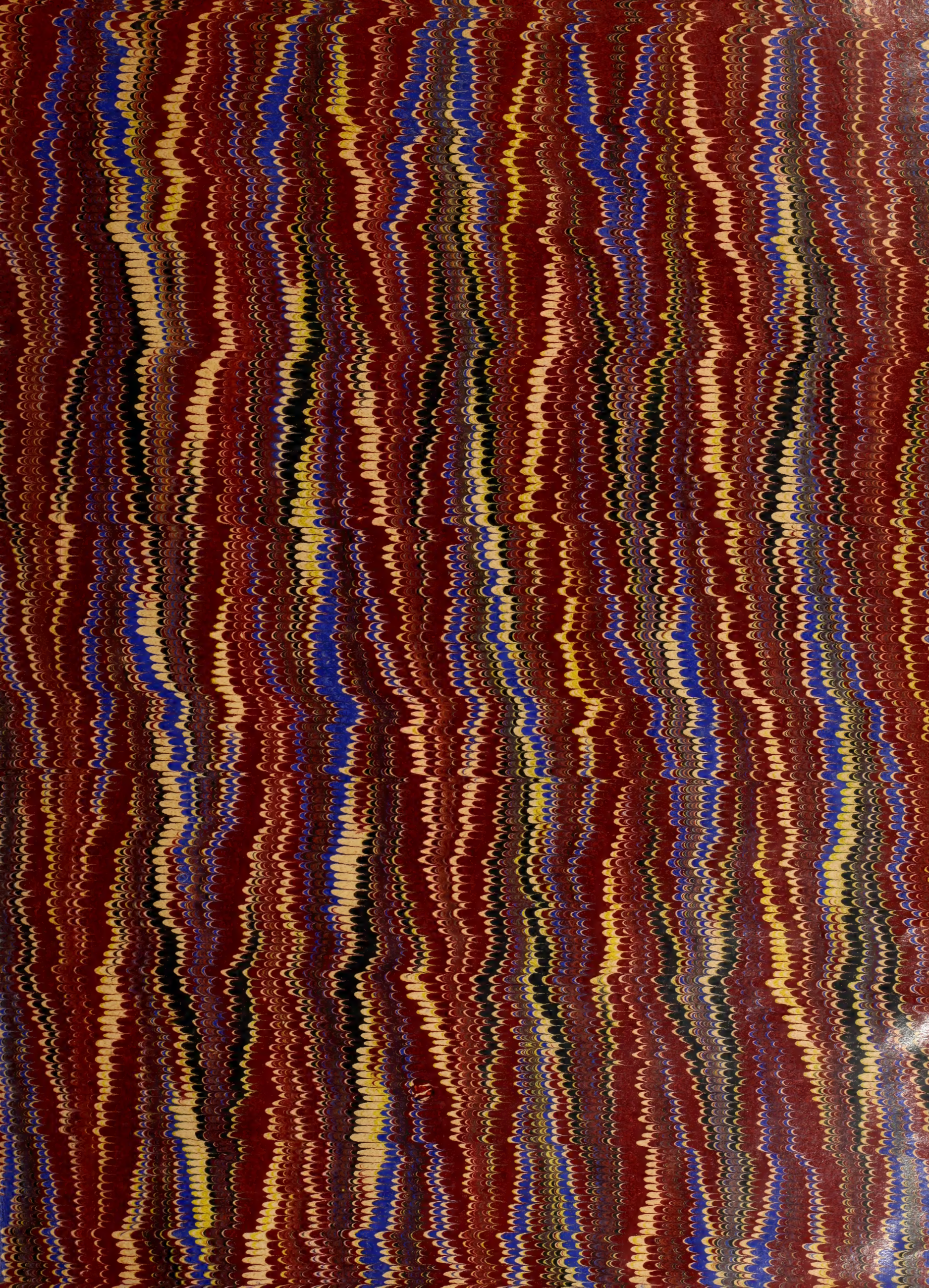
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THE
BIRDS OF AUSTRALIA,

COMPRISING

THREE HUNDRED FULL-PAGE ILLUSTRATIONS,

WITH

A DESCRIPTIVE ACCOUNT OF THE LIFE AND CHARACTERISTIC HABITS

OF

OVER SEVEN HUNDRED SPECIES,

BY

GRACIUS J. BROINOWSKI.

VOL. III.

PUBLISHED BY CHARLES STUART & CO.,
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P R E F A C E.

IF, in spite of the hackneyed adage, "*Qui s'excuse, s'accuse*," I am about to meet trouble half-way by making excuses before criticism has condemned me, it is because I feel public opinion to be more indulgent than conscience. The work I am offering to the public, I know to have faults—some positively unavoidable, others which might perhaps have been avoided, and a few debatable points. The revival of the old-fashioned manner of classifying the species from the lowest to the highest in each family, instead of adopting the more modern system, may be found fault with by scientific men, although the objection to the arrangement I have adopted, will have no sounder basis than custom. Savants will also, perhaps, find here and there a scale too many or one too few on a bird's foot. But as I do not claim to have produced a work to instruct those who are already well informed, but rather to convey information to the millions, who regard a bird as an object to be shot at when seen, I thought it would be more conducive to the attainment of this end to reproduce the birds from an ordinary observer's point of view, and to classify in the order of progressive development, *i.e.*, from the rudimentary to the perfect, rather than study the minutiae of skeleton structure demanded by the purely scientific. Moreover, the ornithology of Australia has had many eminent and devoted expounders, who have immortalised themselves in the field of science. The names of Jardine, Gray Latham, Selby, Bonaparte, Vigors, Horsfeldt, Cabanis, Bennett, Gould, Ramsay, Gilbert, Macgillivray and others will always be remembered with honour. But notwithstanding the labours of these eminent men, "The Birds of Australia" remain a sealed book to the masses. Science has discovered and classified existing species, and perpetuated their remains in museums, but has failed to hold the exterminating hand of the vandal.

If, then, my humble efforts can be made to reach the young, the thoughtless, and the wanton destroyers, teaching them the utility, the intelligence, and the helpless indefensibility of our beautiful birds, and thereby assist in their preservation, I shall be content.

I should be guilty of unfairness were I to allow my readers to suppose that all the merit (if I may use such a term) of producing this work belongs to me. Indeed, I very much doubt whether it would ever have been accomplished had it not been for the aid rendered by many unselfish and kind-hearted people all over the Australian Colonies, who generously presented me with specimens and afforded valuable information without stint. The works of the eminent men enumerated above have also been a source of invaluable assistance, which I acknowledge with deep gratitude.

There have also been many manipulative helpers—some indifferent and many very good, but nearly all willing to do their best. Prominent among the latter is the firm of Messrs. S. T. Leigh & Co., the well-known lithographers of Sydney, who have allowed nothing to stand in the way of making the work as good as possible.

The greatest credit, however, is due to the public-spirited enterprise of the veteran Australian publishers, Messrs. Charles Stuart & Co., who, undeterred by the very large outlay of money that would be entailed, and the foreseen difficulties to be combated in the production of a work of this kind in the Colonies, bravely undertook the publication of "The Birds of Australia." How far their patriotic efforts may be entitled to public recognition, must be left to be determined by the public.

And last, but not least, I have to express my gratitude for the zealous assistance rendered me by my amiable wife, who for years not only superintended the staff of colourists—in itself a hard task—but laboured with a devotion worthy of a much greater cause than this modest work of the

AUTHOR.

COLUMBIDÆ—PIGEONS.

SUB-ORDER II.—RASORES (Scratchers).

THE Pigeon family—one of the most widely distributed of all the families of birds, being common to every part of the terrestrial globe except the extreme Arctic and Antarctic Zones—was long distinguished as a distinct Order, under the one generic term, *Columbæ*; but, under a more philosophical classification, has been regarded as forming a secondary order to the *Gallinaceæ* (or Clamatores), under the designation of *columbaceæ* (or Gemitores), to which classification I defer; still, it may be remarked, that those systematists who have proposed a separate classification for the members of this important family, have good general grounds for their decision, were the extraordinary claims of the Australian group, with their remarkable features of internal organization and their striking external characteristics, alone to be considered.

The variety found in the generic and sub-generic groups is the more remarkable when the monogamous consistency of the whole family is duly appreciated.

Though the external characteristics of such of the groups of this family as it has been found possible to domesticate have been largely interfered with by cross-breeding, still it remains a fact that very few of the members of the whole family submit to domestication, or will pair in confinement.

Of the pigeons of Australia proper, there are found no less than twenty-four species, divided into seventeen well-marked genera, of distinctly varied external form and character of plumage.

These twenty-four species are, again, sub-divisible into two great classes, habitually separate, of which the one is the *Gouridæ*, or Ground-feeding, and the other the *Treronidæ*, or Tree-feeding—each specially and admirably adapted by nature to its habitat and manner of life, and, consequently, possessing well-defined, individual habits as opposite as their designations would convey.

Of the first—the Ground-feeding, Seed-eating Pigeons, such as the Bronzewing (*Phaps Chalcoptera*) and Wonga-wonga (*Leucosarcia picata*)—the characteristics are long and slender tarsi, with toes well adapted for running and scraping, small gullets, strong pectoral muscles, and fully-developed wings, adapted to their requirements for continued and rapid flight over vast tracts of country, where, frequently, owing to capriciousness of climate, food and water are scarce and much ground has to be traversed to provide their daily wants.

In the Tree-feeding, Fruit-eating Pigeons—whose perpetual home is in the tree-tops, and whose longest journeys are only a succession of short flights from one belt of scrub to another—the tarsi are short and stout, the claws long, with an opposing thumb, formed for prehension and suited for perching and grasping, so enabling them to obtain their food in almost any posture, swinging upon the topmost twig of some lofty tree or depending, breast uppermost, from some pendulous, far-reaching branch, as occasion may demand. Of these, the Flock (*Carpophaga leucomela*), the Green (*Megaloprepia magnifica*), and the Top-knot (*Lopholaimus antarcticus*) Pigeons may be cited as typical illustrations. Their voracious appetites are accommodated by large gullets and gapes, so muscularly elastic as to admit of their swallowing, with ease, berries and fruits of a size that would choke a Ground-feeder.

The home of the Bronzewing and its fellow species lies amid the expansive plains of the interior, where the general monotony of the landscape is often only relieved by the sombre pine or the sweet-scented myall, and dense thickets of stunted trees; among the fertile hills of the coast, and in the picturesque pink and white heather of the seaside moors, where the ti-tree and honeysuckle flourish in congenial poverty of soil. Amongst such wilds as these are the birds to be found from year to year, their strong, swift, and long-enduring powers of flight specially fitting them to traverse these enormous wastes, and their very presence giving an air of life and animation to the otherwise still scenery.

Fruit-eating Pigeons, on the contrary, have never been found far inland. They are content to revel amongst that prolific growth of semi-tropical vegetation which is characteristic of the country drained by the northern streams which pour their waters into the Pacific Ocean. Within the recesses of those leafy groves, where thousands of botanical marvels greet the explorer at every mile, where the luxuriant foliage and interlacing vines combine to preserve perpetual shade to all below, the Flock and other Tree-feeding Pigeons enjoy a perpetual feast. No droughts, floods, or frosts would seem to affect them. Nature is ever bountiful in supplying their wants; such is the endless variety of tree and shrub growing in these vast scrubs, that an abundant and constant succession of fruits is never denied them. Such fruits as they select are succulent, and the little water they require is always to be found in the holes or pockets of the trees whereon they feed, and build, and breed, and flutter away their harmless, amorous lives, without knowing any necessity for ever descending to the ground.

All the Pigeon genera are remarkable for the especial beauty and brilliancy of their plumage. In no other tribe of the feathered race do we meet with such diversity of effect so adapted to gratify and delight the eye; and this is especially true of the Australian representatives, among which are many members vying with the Parrot and the Humming-bird in the brilliancy and lustre of their dress; and even in the more modest representatives, the chaste assortment of rich and well-blended greys of every shade, intermingled with prismatic hues varying with each motion of the birds, never fails to command our admiration and delight.

One of their chief tribal characteristics was well seized by the ancients, when to the Pigeon was assigned the place, by reason of the marked affection exhibited between the sexes, of the constant and appropriate attendant upon the Goddess of Love.

The voice, or note, of the whole family consists only of guttural sounds or "coos," varying from the most tender and plaintive, in some, to the hoarse and unpleasant in others.

Of all the family the flesh is wholesome and nutritious, and generally palatable; while, of some, it is exceptionally delicate, and so easily digestible as to render it especially valuable for invalids, for whom it is in much request.

It is sad to have to record that year by year many of the species hereinafter enumerated are rapidly disappearing from their haunts, and that soon we may anticipate the total extermination of several of our rarer indigenous Pigeons as clearing and settlement progress in the country.

PLATE I.

MACROPYGIA PHASIANELLA (*Gould*).

LARGE- or PHEASANT-TAILED PIGEON. GENUS: MACROPYGIA.

THE solitary representative of this genus found in Australia is to be met with plentifully upon the Richmond and Tweed Rivers, among the prevailing dense brushes, in which it specially delights. In its feeding and perching habits, it displays all the characteristics of the *Gouridæ* or Ground-feeding Pigeons, selecting such seeds as fall from the Cape-gooseberry (*Physalis edulis*) and the ink-berry (*Phytolacca decandra*).

In flight it is noisy and comparatively slow, and, as may be presumed from its lengthened tarsi, spends most of its time upon the ground. When disturbed it evinces little fear, contenting itself in seeking some neighbouring low tree, where it becomes an easy prey to the sportsman. The finely-marked, broad-spreading tail, which it fully displays upon alighting, gives an exaggerated notion of its size, which, however, is small. As food, the flesh is coarse and insipid, and not regarded with favor.

I have not found its nest, and so cannot speak as to its habits of nidification, though I have gleaned from timber-cutters that it builds in August, generally in low bushy trees close to the boundary of the scrub. It is of solitary habit, and, however plentifully it may exist in any locality, it is a rare occurrence to see more than one or two birds at a time, and then usually upon the banks of a stream or on the confines of the brush.

Its coo is loud, plaintive, and easily distinguishable.

The prevailing color of the plumage is a rich red-brown, deepening into bronze-purple on the breast; wing coverts, deep warm brown; exterior tail feathers, rich brown, barred with a broad band of black at extremities; irides, blue; bill, dark olive; feet, rose-pink.

The sexes present no difference in color; the female is slightly smaller, but externally so similar to the male as to almost defy detection.

The illustration is two-thirds life-size.

MEGALOPREPIA MAGNIFICA (*Reichenbach*).

MAGNIFICENT FRUIT-PIGEON. GENUS: MEGALOPREPIA.

THE varied and resplendent beauty of this bird's plumage fully entitles it to the special appellation of "magnificent," for, of all the Pigeon family found in Australia, it is certainly one of the most splendid representatives.

It is usually a timorous, retiring bird, frequenting the inmost recesses of the brushes which extend along the coast from the Cardwell district in Northern Queensland to the extreme south-east of New South Wales, and feeding largely upon the wild-fig and nut palm, so plentifully found therein. But in the summer, when the white cedar (*Melia Australis*) is in full-bearing, every other food is discarded for the sweet-flavored drupe which this deciduous tree yields, and so seductive is this fruit that, not only will this ordinarily shy bird leave its customary, secure haunts for the more open district where the cedar flourishes, but will become positively indifferent to all intrusion, and recklessly expose itself to wholesale destruction. At this season it is so highly esteemed, on account of the peculiarly agreeable flavor imparted to its flesh by the cedar-fruit, that its total extinction is imminent, unless some more strict interpretation of the close-season law be enforced than at present obtains.

It breeds early in the season, in the most inaccessible parts of the brush, where its presence is alone evinced by the extraordinary hoarse, booming coo, which the male incessantly utters during the pairing time.

The plumage is alike in both sexes, the female being a rather smaller bird. The back and wings are a bright green, merging into a deep lustrous bronze at the tail and extremities; head and neck, light grey; centre of throat, breast, and belly, warm golden purple; irregular yellow markings across the wings; under-feathers of thighs and vent, orange yellow; irides, orange; bill, yellow; feet, grey.

The illustration is two-thirds life-size.



α MACROPYGIA PHASIANELLA (*Gould*)
Large-tailed Pigeon

β. MEGALOPREPIA MAGNIFICA (*Reichenbach*)
Magnificent Fruit-Pigeon

PLATE II.

MEGALOPREPIA ASSIMILIS (*Bonaparte*).

ALLIED FRUIT-PIGEON. GENUS: MEGALOPREPIA.

ONLY upon a closer comparison than is generally possible can this bird be distinguished from the Magnificent Fruit-Pigeon (*Megaloprepia magnifica*), with which it is generally confused. Frequenting the leafy tops of the highest trees, and seldom to be seen taking long flights, it may readily be mistaken for an immature specimen of that species, so similar is it in general appearance.

For long after its discovery on the islands off the north-east coast it remained doubtful whether it ever migrated to the mainland; but more recently the fact has been fully established that small numbers may yearly be met with all along the northern coast wherever its favorite palm tree is found.

The dissimilarity between the sexes is very slight; the hen is slightly the smaller of the two and is less brightly coloured than the male.

In its life and habits it exhibits all the general characteristics of the other Fruit-eaters, which need not be again detailed. Though a regular visitant to the mainland, it does not appear to breed away from its more tropical haunts on the islands.

The head and throat are light grey, with a rich purple marking along the centre of the throat, extending to the belly; the whole of the back, wings, and tail, bright yellowish green, merging at the tips of the wings into bright orange-yellow.

The illustration is three-quarter life-size.

MYRISTICIVORA SPILORRHOA (*Gray*).

WHITE NUTMEG PIGEON. GENUS: MYRISTICIVORA.

THIS singularly shy bird has acquired its popular name from the well-remarked habit it has of exclusively frequenting the wild nutmeg tree (*Myristica*), in the tops of which it may be said to pass its life, except during the brief pairing season. Then it commonly selects the denser scrubs or the mangroves, most probably guided by their contiguity to fresh water. Here it makes its nest, a more than ordinarily careless structure, the few crossed sticks employed barely sufficing to prevent the single egg it is destined to receive from falling through to the ground.

The fruit of the nutmeg is undoubtedly swallowed whole by the bird, and to the process of deglutition is left the separation of the nutritive portion, which we know as mace, from the hard and indigestible nut, which is voided in flight. Thus this elegant little creature becomes the useful means of disseminating the remarkable nutmeg tree, and it is found that some chemical treatment corresponding to that which it undergoes during its sojourn within the body of the bird is actually necessary before the nut can be fertilized and induced to take root.

So strictly arboreal is this pigeon in its habits that it is questionable if it ever alights upon the ground, and so timid that it is almost impossible to procure specimens unless stratagem is resorted to, for, upon being disturbed, it will rise with great rapidity to an immense height, well out of the reach of any destructively-minded intruder.

At sundown little flocks of ten or twenty birds may be observed wending their way to roost, and then their quarters may be easily traced by their loud and very deep-toned coo, persistently iterated until night sets in.

The prevailing colour of the plumage is cream-white; wing coverts, dark grey; tail, dark grey, merging into black at tips and edges of feathers; irides, brown; bill, olive, with yellow point. The colouring is identical in both sexes.

The illustration represents the bird three-quarter life-size.



BROINOWSKI. I

a. MEGALOPREPIA ASSIMILIS (Bonap.)
Allied fruit Pigeon.

b. MYRISTICIVORA SPILORRHOA (Gard.)
White nutmeg Pigeon.

PLATE III.

LEUCOMELANA NORFOLCIENSIS (*Bonaparte*).

WHITE-HEADED FRUIT-PIGEON. GENUS: LEUCOMELANA.

THIS bird, more commonly known among settlers as the "Flock" Pigeon, is found generally along the whole of the north-eastern sea-coast, frequenting and breeding in the dense brush; but it has little beyond its individual external beauty to require notice.

Its power of flight is great, but ungraceful and noisy, and flocks of from a dozen to fifty birds may constantly be observed passing over the tree-tops in search of fresh feeding-ground, being seldom constant to one place, no matter how abundant the supply of food may be.

It would seem to be somewhat quarrelsome if the constant and noisy inter-chasing, from branch to branch of the trees, may rightly be so interpreted; but then is the time when it fully displays, in the glinting sunlight, all the iridescent beauty of its plumage.

The male bird has wings, tail, and back of a warm olive-brown of the deepest shade, with a magnificent shimmer, blended towards the points of the feathers into a bronze-purple; the head, throat, and breast, yellowish white; the belly, a dull yellow, and the flanks blue grey; irides, orange tinted; and beak pink, with wart-like excrescences; feet pink and yellow.

The hen is slightly smaller than the male, and her colouring duller and the markings not so pronounced.

The usual careless nest suffices, and in it one or two eggs are deposited and hatched, but it is uncertain if more than one brood is reared in each season.

Fortunately for itself, it is not considered good eating and so enjoys comparative immunity from any except the most wanton destruction.

The illustration is one-half life-size.

LOPHOLAIMUS ANTARCTICUS (*Gray*).

TOP-KNOT PIGEON. GENUS: LOPHOLAIMUS.

AUSTRALIA furnishes the only species of this genus as yet discovered, and it is now generally supposed to be peculiar to this continent. In some minor particulars of habit it differs from the other members of its family. For instance, in the economy of nidification it is inconstant, a habit very seldom observable in the Pigeon in its natural state, for, wherever found away from the haunts of man, it is distinctly monogamous. This inconsistency, however, may, perhaps, be more justly attributable to gregariousness than to habit, for the male, during the breeding season, exhibits all the customary, unremitting attentions to his mate and her nestlings, although, as soon as the latter are able to take care of themselves, they may be found gathering promiscuously with the old birds into flocks, preparatory to taking flight, as the season advances, into the more southerly portions of New South Wales, in search of the later-ripening fruits.

Of its food, the wild fig—which it can swallow whole by reason of the elasticity of its gape and large gullet—the native currant (*Leptomeria acida*), the rosella (var. *Hibiscus*), and cabbage-palm (*Corypha Australis*) berries would appear to form the staple, although many others, perhaps, even of larger size, are laid under contribution. I remember having witnessed a flock, consisting of several hundreds, in the neighbourhood of St. George, in Queensland, feeding voraciously upon a species of small tomato (var. *Solanum*), which there grows wild and in great profusion. So tempting was this food that the birds were induced to deviate from their usual course and to descend from their favorite lofty tree-tops to obtain it—a circumstance so unusual, I believe, as to deserve record.

When perching, it sits bolt upright, with an air of confidence more suggestive of a hawk than a pigeon; and, when flying, the noise of its fluttering wings is so great that it may be heard at a considerable distance. A flock of these birds, alighting upon a tree, often in number sufficient to weigh down the selected bough, presents a most animated picture; for, at the moment of alighting, every crest is erected and the full beauty of the bird displayed as at no other time.

Its habitat ranges from the Moruya district, in New South Wales, to the Endeavour River, in Northern Queensland, between which limits this bird is constantly found.

It pairs as early in the season as the beginning of August, and is found in flocks about the end of October, thus favouring the supposition that, by that time, the breeding season is over. Two eggs are hatched in a slovenly-built nest, placed in an upper fork of a high fig tree.

This bird affords a noteworthy instance of the prevailing wantonness, which cannot be too persistently or severely reprehended, that leads to the wholesale destruction of unmistakable birds, whose flesh, as in this case, is well-known not only to be unpalatable, but often actually worthless, and yet are continually slaughtered, as their constant, but unjustifiable, exhibition at many of the metropolitan poultry shops testifies!

The prevailing colour of the upper part of the body is a warm neutral grey; the head, neck, and under portion of body, light grey tint; the tail tipped with dark brown, with a bar of the same colour across its centre; wing coverts also dark brown; irides and bill, bright red; occipital tuft, dark burnt-sienna, merging into burnt-umber at base; feet, reddish purple. There is no external difference between the matured young and the old, or between the sexes.

The illustration is one-half life-size.



PLATE III

α. LEUCOMELANA NORFOLCIENSIS (E. 201)
White-headed Fruit Pigeon

ALBOMELANA NORFOLCIENSIS (E. 202)
White-headed Fruit Pigeon

PLATE IV.

PTILINOPUS SWAINSONII (*Gould*).

SWAINSON'S FRUIT-PIGEON. GENUS: Ptilinopus.

IN habit this bird does not differ in any way from other Fruit-eating Pigeons, such as the Flock or Green Pigeons. Though solitary, it is fairly plentiful in the thick scrubs of the North of Queensland, and, most probably, wherever the Rosella (var. *Hibiscus*) thrives. In travelling from Cooktown to Palmer River it may frequently be seen though seldom, if ever, in company. Oddly, it manifests an especial liking for that large-stoned fruit, the quandong (*Santalum Preissianum*), which, if swallowed whole, could not possibly be digested. Most probably it selects only such as are bursting-ripe, and from which the stone can be easily disengaged. I was sorry not to be able to prosecute my researches further, especially respecting the nidification of this bird, but I was compelled, so intense was the heat, to seek a cooler district, even at the expense of my observations.

The prevailing body colour is light green, toned with yellow, merging at tips of wing feathers into deep olive bronze, with broad yellow margins; crown of head, rich deep crimson, fringed with yellow; breast, bright green spangled with silver-grey, which graduates into light crimson, again merging on the abdomen into orange red; irides, dark orange; bill, olive; feet, neutral grey.

The illustration is three-quarter life size.

PTILINOPUS EWINGII (*Gould*).

EWING'S FRUIT-PIGEON. GENUS: Ptilinopus.

THE habitat of this beautiful bird is confined to the extreme northern coast. In many respects it is similar to the preceding (*Ptilinopus Swainsonii*), and may easily, at a distance, be mistaken for that bird. Frequently during the winter months it may be met with, in small groups, on the North Peninsula, and occasionally also on the Herbert River, where, however, it confines itself chiefly to the Calophyllum trees (Or. *Clusiaceæ*), whose enormous growth and dense foliage afford a secure asylum for nidification.

The differences which distinguish it from Swainson's Fruit-Pigeon are its somewhat diminished size; the rose-pink, instead of bright crimson, colouring of the crown of the head, and the pale green-tinted grey of the breast in place of dull green; but the chief and most noticeable distinction is found in the clearly-defined purple-bronze crescent upon the breast.

It lays two faintly speckled eggs in a nest comparatively well formed for a pigeon, and the young ones may be seen on the wing about the latter part of December or early in January.

The crown and fore part of the head are rose-pink, with a border of bright yellow extending as far as the bill; back and front of neck, pale grey; breast, pale green-tinted grey, each feather serrated and flecked with grey; under body, deep orange-red, dissolving into bright yellow, with a crescent-shaped band immediately below the breast, of purple-bronze; upper part of body, bright green; lesser wing coverts, olive, with a margin of yellow to each feather, developing in secondary and tertiary feathers into burnt sienna, similarly margined; tail, green, tipped with yellow; irides, orange-red; bill, dark grey; feet, dark olive.

The illustration is three-quarter life-size.



G. J. BROINOWSKI, FCS

a. PTILINOPUS SWAINSONII (Gould)
Swainson's Fruit Pigeon.

b. PTILINOPUS EWINGII (Gould)
Ewing's Fruit Pigeon

PLATE V.

LAMPROTRERON SUPERBA (*Bonaparte*).

SUPERB FRUIT-PIGEON. GENUS: LAMPROTRERON.

FEW birds can compare with the appropriately named "Superb" Fruit-Pigeon in variety and brilliancy of colouring, well illustrating in its varied tints the true harmony that is to be found in a well-balanced contrast of colours.

Though seldom met with upon the mainland—to which it would appear to be attracted simply by the great variety of fruits which the rich scrub of the northern coast-line affords—it is by no means uncommon on the many adjacent islands.

For the short time that it is to be found upon the mainland it takes up its residence in the densest and least accessible parts of the thickest scrub, out of the reach of all but the most pertinacious enthusiast. Here, however, amidst all the countless beauties of its sylvan retreat, must it be seen, as it disports itself among the leafy branches or sits preening its feathers in the glinting sunlight, to enable one to fully realize with what matchless grace and resplendent elegance its every movement is endowed.

In the male bird the crown of the head and upper part of the back are crimson; back and sides, green, feathers tipped with bronze, with black centres; wings, green and brown; sides of the head and throat, pearly grey; breast, russet, with dark grey band across; belly, grey, merging through green into olive; upper part of tail, green; end feathers, white tipped with green.

The hen lacks much of the resplendent gorgeousness of the male bird, the prevailing tints of her colouring being yellowish-green, with greenish-grey breast; abdomen, pale yellow, lacking the bands which distinguish the male, but possessing similarly marked primary and secondary wing feathers.

The illustration is three-quarter life-size.

CHALCOPHAPS CHRYSOCHLORA (*Gould*).

LITTLE GREEN PIGEON. GENUS: CHALCOPHAPS.

ONE of the prettiest and, from its unobtrusive habits, one of the least known of the Australian birds, the Little Green Pigeon is by no means uncommon in the more thickly wooded portions of New South Wales, especially those parts in proximity to the coast. It has been noticed as far north as the borders of Queensland, and though sparingly scattered, as compared with some birds such as the Grass Parrakeets (*Pezoporus formosus*), its rarity is attributable to its secretive nature rather than to the more common cause—indiscriminate destruction.

Like the Green Parrakeet, upon any appearance of intrusion or danger, it seeks cover in the grass, where it will continue perfectly quiet in hiding until either the seeming danger is past or it can no longer elude discovery. In the latter case it will rise and rapidly fly a short distance through the surrounding scrub, and again settle in the grass if opportunity offers or necessity demands, and by these tactics, aided materially by the lush and tangled undergrowth of myrtaceous plants, bracken, young gum trees, epacrids, climbing plants of many kinds, prickly acacias, etc., everywhere common to the scrub of New South Wales, it has little difficulty in successfully evading man's pursuit. Such coverts it is very rarely known to leave, and so strictly does it adhere to them, that it is scarcely a matter for surprise that the bird should remain so little known generally.

The sexual difference in the external appearance of the mature birds is unusually remarkable.

In the male bird the crown and sides of head are russet-grey; back of neck, olive; upper part of body, bronze-grey, with three well defined pearl-grey bands across lower half; tail feathers, darker bronze-grey; primary and secondary wing feathers, bright green, developing into deep olive, each feather margined with lustrous yellow; tertiaries, warm brown; breast, chin, and under surface, russet; bill, red; legs and feet, olive.

In the female the head, neck, and all the under body are a warm brown; breast, olive-tinted; tail, rich brown, but the side feathers grey. Throughout, the whole of the colouring is much less brilliant than in the male.

The illustration is of the male bird and three-quarter life-size.



G. J. BROINOWSKI, FCS

a. LAMPROTRERON SUPERBA (Bonap)
Superb fruit Pigeon

b. CHALCOPHAPS CHRYSOCHLOA (bould.)
Little green Pigeon

PLATE VI.

OCYPHAPS LOPHOTES (*Gould*).

THE CRESTED BRONZEWING. GENUS: OCYPHAPS.

HERE again, similarly with many others of this family, we have another solitary instance of a genus known only to Australia, and though not so conspicuous as some of its congeners, it is by no means wanting either in elegance of form or beauty of colour. The grace of its occipital crest is well deserving of notice, for although we may be puzzled to account for the use of such an ornate adjunct, we must allow that were it merely to please the eye of the beholder it would admirably fulfil that purpose.

Its flight is one of the most rapid of any of the pigeon tribe, and is peculiar. When starting, it makes a few rapid flaps and then sails along on steady wing, but at a surprising rate. As it alights it throws up its head with outspread crest, and erects its tail until the two almost touch; but, when perching on the trees, the distinguishing crest lies so closely on the back of the head as scarcely to be noticeable from below.

Its gregariousness is also remarkable. Often a flock may be seen alighting almost simultaneously on a branch of a tree, perching as close as they can possibly settle, and, upon some secret signal, as simultaneously descending in a body to the water, whence, after drinking, the whole flock will return, *en masse*, to the chosen perch.

The nest is slightly, but carefully, formed of twigs generally placed in a low tree, and two eggs are laid by the hen before sitting. These are pure white, and nearly as broad at the greatest perimeter as they are long.

This bird was appropriately called by Sturt, the explorer, the "crested pigeon of the marshes," for it is commonly found on the plains, valleys, and all the well-watered open country of the interior of New South Wales and southern parts of Queensland.

The head, throat, and under part of body are a fawn grey; crest, a shade darker; the upper part of body, back of neck, tail, and thighs, brown grey; wing coverts, bronze, tipped with white; beak and feet, grey.

The illustration is three-quarter life-size.

ERYTHRAUCHÆNA HUMERALIS (*Bonaparte*).

THE BARRED-SHOULDERED DOVE. GENUS: ERYTHRAUCHÆNA.

IN the few birds of the Dove family indigenous to Australia those attributes generally associated with the name "dove"—purity, inoffensiveness, and graceful symmetry, for which by time-honoured acceptance the dove is the unique symbol—are found combined with a more than usually elegant and harmoniously coloured plumage.

Of the *Erythrauchæna* genus, the Barred-shouldered Dove is the only member domiciled here, and is the largest, if not the most resplendently endowed, of all its family. Though seldom met with south of the Liverpool Ranges, New South Wales, it is fairly plentiful all over the Northern territory of Queensland. In the swampy scrub, on the banks of streams and lakes, and so constantly wherever the mangrove (*Rhizophora*) grows, that it is colloquially known as the "Mangrove Dove," it is abundant, feeding upon the seeds and berries of the grasses and leguminous plants, and passing most of its time upon such marshy wastes, for which its feet are specially adapted.

Excepting during the short breeding season, which commences in August, it is an uncommonly tame bird and may be approached without difficulty. When disturbed it simply flutters from branch to branch, but without betokening any of the more ordinary accompaniments of fear.

The nest is slight and slenderly constructed of small cross-laid twigs, often placed in the small pine (*Pandanus pedunculatus*), and in such a position, which the leaves of this evergreen readily afford, as to ensure as much shelter as possible from both sun and rain. The hen lays two white eggs, and breeds only once in each season. At pairing time the note of the male becomes a soft, bubbling *coo-roo*, "half sob, half sigh," frequently iterated.

The crown and sides of head, sides of neck and general under surface of body, a delicately tinted grey, merging into a rose tint; whole of upper surface, rich russet, graduating in intensity from the back of the neck to the tail, each feather clearly margined with black, producing a scaly appearance; under tail, dark grey; irides, orange; bill, grey; feet and legs, light russet.

The illustration is three-quarter life-size.



G. J. BROINOWSKI, FST

a. OCYPHAPS LOPHOTES (*Gould*)
Crested Bronze Wing

b. ERYTHRAUCHENA HUMERALIS (*Bonap*)
Barred shouldered Dove.

PLATE VII.

GEOPELIA TRANQUILLA (*Gould*).

THE PEACEFUL DOVE. GENUS: GEOPELIA.

THE habitat of this bird extends over the interior country north of 32° S. lat., and the bird would appear to affect the eastern half in preference to the west, for it is as unknown in Western and South Australia as it is plentiful in the country to the north of the Liverpool Ranges, where, in the sparsely timbered region skirting the plains, the luxuriant and varied seed-bearing undergrowth assures it ample sustenance and continual shelter.

Its habits are characteristically simple, and in nidification and breeding it does not differ from the Barred-shouldered Dove.

Between the sexes the only noticeable dissimilarity is the slightly inferior size of the hen.

The note of the male bird is soft and tenderly plaintive, and the Scriptural simile, to “mourn sore like doves,” appositely illustrates the effect of its monotonous repetition.

The crown and sides of head, and general under surface of body, grey, each feather on the breast margined with black; back of neck and primary and secondary wing feathers, golden brown; tail and tertiary wing feathers, purple; irides, dark grey; bill, blue; feet and legs, pink.

The illustration is three-quarter life-size.

STICTOPELIA CUNEATA (*Reichenbach*).

THE LITTLE TURTLE-DOVE. GENUS: STICTOPELIA.

BETTER known and more widely distributed than any other of the Doves, the Little Turtle-Dove is found in each of the Australian Colonies, and so readily has it accustomed itself to the presence of man, that there are few settlers' houses that cannot boast of at least one attendant pair, whilst in the towns and cities it appears to accommodate itself equally well to the altered condition of things.

In habit and character this bird manifests all the typical simplicity, innocence, and harmlessness which we are wont to connect with the Dove ideally, and the quaint elegance of its appearance felicitously accords therewith.

In its natural haunts it lives mostly upon the ground, roosting in the smaller trees, and though habitually of decidedly solitary habit, it may sometimes, in exceptionally favorable localities, be met with in small flocks. In the suburban districts of Sydney I have constantly observed examples, and usually in pairs, fluttering about the houses and gardens.

The nest is constructed of grass-stalks carefully interwoven, much in the manner of those of other doves, but considerably neater in structure and form than is customary. This is placed in some bushy shrub, or on the overhanging grasses of the grass-tree (*Xanthorrhoea*), whereon it is more secure from observation. This bird lays two white eggs, and its note, always singular, becomes more than usually plaintive and monotonous at pairing time.

In the male the prevailing colour of the body is a delicate grey, with a citrine tint at throat, back of the head, and abdomen; wing coverts, deep neutral colour, with irregular light grey spots; tertiary wing feathers, deep brown, with white margins; tail, neutral colour, with citrine hue; bill, olive; feet and legs, deep orange.

The hen differs from the male chiefly in size and in the browner tinge of the wing coverts, and the less numerous and more irregular disposition of the grey spots.

The illustration is three-quarter life-size.

LOPHOPHAPS PLUMIFERA (*Reichenbach*).

THE PLUMED BRONZEWING. GENUS: LOPHOPHAPS.

NEARLY all of the Australian explorers make mention of this bird, undoubtedly one of the most graceful and attractive of its kind. In its feeding and perching habits it very much resembles the quail, preferring the open country, and taking alarm very readily at the slightest unusual noise. As though proud of the splendour of its plumage, it delights to bask in the full glare of the sunshine, perched on some exposed rock or sandy spur, with crest erect. If disturbed, it quickly flies to the nearest grass, into which it drops, and by means of its extraordinary running powers easily eludes discovery. Few birds are more difficult of approach.

It ranges over most of the interior, wherever it can rely upon sufficient water, and is only very occasionally met with in numbers.

Back of head and crest, russet; forehead and sides of neck, grey; chin, white; bare surface around eyes, yellow, bounded above by black line; throat, banded with black; breast, russet; belly, white, merging into chrome; back and shoulders, russet, with well-defined circular bands of cream white; tail, black; tertiary wing feathers, very dark brown; lesser wing coverts, dark russet, centres of feathers bearing a yellow spot margined with brown; secondary wing feathers, metallic bronze; bill, feet, and legs, dark grey.

The illustration is about two-thirds life-size.



G. J. BROINOWSKI, FCS

α. GEOPELIA TRANQUILLA (Gould)
Peaceful Dove

♂ STICTOPELIA CUNCATA (Reicheub)
Crested Dove.

♂ COLUMPHAPS PLUMIFERA (Reicheub.)

PLATE VIII.

PHAPS CHALOPTERA (*Selby*).

THE COMMON BRONZEWING. GENUS: PHAPS.

THE popular name of Bronzewing is applied to many species, and is descriptive of the main peculiarity of the plumage—a clearly defined spot of lustrous bronze adorning the wing coverts. In the bird under notice, this spot is strongly pronounced against the rich brown and grey tints, harmoniously blended, on the back, wings, breast, back of the neck and forehead. The head and chin are a pale buff; upper tail feathers, brown; under feathers, grey, softening towards abdomen, and developing into brown madder at the breast, again merging into the grey of the throat; bill, very dark neutral color; irides, rich brown; and the legs and feet, light red. The hen is very similar, but the coloring throughout is subdued, and lacks much of the brilliancy exhibited in the male.

This bird is found all over the Australian continent, wherever enough water to satisfy its small daily requirements is within reach of its evening flight; a flight which is remarkable alike for its extraordinary power, and the swift, arrow-like directness of its course.

With, perhaps, the single exception of the “Wonga Wonga” (*Leucosarcia picata*), the Common Bronzewing is unexcelled as an article of food, especially after the harvest season, when it will often turn the scale at from eighteen to twenty ounces. The sweet flavor, and the juiciness of its flesh, render it an agreeable delicacy, highly valued for invalids on account of its nutritious properties.

In its favorite haunts, which are yearly becoming more and more restricted as settlements increase, it may be regularly observed, morning and evening, scratching busily on the ground for such food as the thistle and wattle (*Acacia pycnantha*, *decurrens*, etc.) provide; or, in mid-day, lazily dozing in the leafy shade of the taller trees, wherein it nightly roosts. Often the weary, benighted traveller is under deep obligation to this bird for an indication, by its loud, but tender, coo, of the vicinity of water, which its invariable practice of drinking before seeking rest reliably affords him.

Its nest, like that of others of its family, is simply a careless collection of twigs and sticks, placed in the fork of some low gum tree (*Eucalyptus*), honeysuckle (*Banksia*), or native cherry (*Exocarpus*), and is always within convenient distance of water.

In exceptionally favorable seasons, three broods are occasionally reared, but usually two suffice to occupy the attention of the pair during the breeding time, between the months of August and February. The eggs are pure white, and after two have been laid the hen commences sitting; then the male-bird becomes especially attentive, relieving the hen very frequently upon the nest, and generally exhibiting the most affectionate and untiring interest in his mate and their offspring, while every action testifies to his pride, his self-importance and tender solicitude.

Although some slight difference in the size and markings of the feathers is observable in various localities, it is too trifling and unimportant to merit a separate classification such as some naturalists have put forward; while it serves to endorse the theory of migration which such separate classification would negative.

The illustration is two-thirds life-size.

PHAPS ELEGANS (*Gould*).

THE BRUSH BRONZEWING. GENUS: PHAPS.

WITH the exception of the Common Bronzewing (*P. Chaloptera*), this species is found over a more extensive area than any other of its genus, being plentifully distributed over the whole of the southern portion of the Australian Continent, and especially abundant on the islands off the Victorian coast and the whole of Tasmania. Inland, I have met with this bird as far north as 25° S. lat., and most commonly, as on the borders of the “Ninety-mile Desert,” affecting the mallee (*Euc. dumosa*) or other dwarf scrub land, always in the vicinity of water or marsh, but never in flocks, and, excepting during the breeding season, scarcely ever in pairs.

It has a voracious appetite, and spends most of its time upon the ground, for ever scratching busily among the fallen leaves for the smaller berries and seeds which constitute its staple food. Wherever the Native Cherry (*Eriocarpus*) is plentiful there may the presence of the Brush Bronzewing be counted upon, and there is little doubt that the shed fruit of this tree forms a special dietary attraction.

The excessive fluttering of its short, heavy wings renders flight a very noisy performance, and, though its intermigratory habit is indubitable, it would appear to exercise its powers of flight little more than is actually necessary to convey it from one belt of scrub to another, or to place it out of threatened danger. The somewhat un-pigeon-like contour of its body is due to the depth and development of the pectoral muscle and the short full tail, which combine to give it a squat appearance.

The nest is very frequently simply a convenient arrangement of the wind-borne leaves and twigs it finds lodged in the fork of the ti-tree (*Leptophyllum*), and, making allowance for territorial variation, it is unlikely that it breeds more than once in each season. Gould relates that in Western Australia "it has been observed to breed sometimes on the ground," but, frequently as I have found its nest, both early and late, it has always been situated in some low bush or grass-tree.

There is no external difference noticeable between the sexes.

Crown of head, grey, with a narrow band of russet extending over each eye to the bill; face, breast and under surface, warm grey, tinged with yellow; throat and chin, russet, bordered by dark grey; back, warm russet, feathers darkly bordered; tail and tertiary wing feathers, deep brown; secondary wing feathers, bright metallic bronze, splashed with white around edges; bill, olive; feet, orange-red.

The illustration is two-thirds life-size.



♂ BARKS CHAUNTERO - 0000
Common (Orange Wing)

PLATE IX.

LOPHOPHAPS LEUCOGASTER (*Gould*).

WHITE-BELLIED BRONZEWING. GENUS: LOPHOPHAPS.

OWING to the scarcity and extreme secretiveness of this bird, the most diligent enquiries have as yet failed to furnish thoroughly trustworthy information concerning all its habits. Differentiation, therefore, is a difficult matter. In many respects it so closely resembles the Rust-coloured Bronzewing (*Lophophaps Ferruginea*) that it is a moot point whether it is a distinct species, or the same bird modified in plumage from the accident of a different habitat. It is rather larger than the *Lophophaps Ferruginea*; its general colouring is lighter, while a portion of the under-part of the body is white instead of being uniformly russet.

It is essentially a terrestrial bird, seldom if ever perching during the daytime, and runs very swiftly, as may be surmised from its long and strong tarsi, so well adapted for running and scraping. In these and some other minor peculiarities it bears a close resemblance to the Quail. The pairing season generally begins about the latter part of August, and the nest is usually of Nature's providing—a tussock of grass being deemed sufficient to insure both shelter and security.

Its habitat extends all over South Australia, and its food consists entirely of grass and other seeds.

The colour of the back of the head is a light raw sienna; the crest is the same colour, deepening into brown at the tip; the forehead is light grey; chin and sides of neck, white; the bare surfaces round the eyes, light red bounded above by a black line; throat, banded with black; breast, raw sienna, with markings of dark burnt umber; under part of body, white; back and shoulders, raw sienna, with well-defined markings of burnt umber and white; tertiary wing feathers, brown; lesser wing coverts, raw sienna, the centre of each feather bearing a white spot outlined with dark burnt umber; secondary wing feathers, metallic bronze; tail, brown; bill, feet and legs, dark grey.

No external difference exists between the sexes.

In size it measures seven inches and three-quarters from tip to tip.

LOPHOPHAPS FERRUGINEA (*Gould*).

RUST-COLOURED BRONZEWING. GENUS: LOPHOPHAPS.

IT would be somewhat difficult on a casual observation of this very interesting bird to assign it a place among the Pigeon family, as it bears a far stronger resemblance in the contour of its body, in gait and in flight, to the common Partridge than to the Pigeon.

The unique colouring of this bird is most attractive, being a harmonious blending of russets and browns that pale and darken in the gleaming light. Its form, however, is neither graceful nor pretty.

Its food consists entirely of seeds of various kinds, which it evidently finds in abundance on rocky ground, for it is in such localities, especially in the vicinity of water, that this Pigeon is invariably to be found.

Incubation takes place in the months of July and August, when two light creamy eggs of an oval shape are laid. The colour varies from light cream to a stony tinge, and the size of the egg is one inch long by nine lines broad. The nest is made in a slight depression of the ground, shaded by a small bush or slight stony rise, not far from water.

The accompanying plate conveys a better impression than the most vivid word-colouring, as the beauty of the plumage lies rather in the rich blending of shades than in individual colours. The top of the head and double-pointed crest, light russet; forehead and sides of neck, grey; chin and cheeks, white; bare surfaces round eyes, light red, crossed by faint black lines; breast, back and shoulders, russet, with circular markings of white outlined with vandyke brown; tail, black; tertiary wing feathers, vandyke brown; lesser wing coverts, dark russet, with bands of dark metallic green, outlined with vandyke brown; secondary wing feathers, light metallic bronze; bill, feet and legs, dark grey.

Measurement, about seven inches long.

Habitats, Interior and Western Australia.



G. BRUNOWSKI, F.C.

a. LOPHOPHAPS LEUCOGASTER (Gould)
White-Bellied Bronze-Wing.

b. LOPHOPHAPS FERRUGINEA (Gould)
Rust-Colored Bronze-Wing.

PLATE X.

PETROPHASSA ALBIPENNIS (*Gould*).

WHITE-QUILLED ROCK PIGEON.

THIS is a very singular species of Pigeon, found only in the most rugged and sterile districts of the north-west coast of the Continent. Its haunts are the sandstone cliffs of the ranges about the Victoria River.

Leichhardt, in his explorations of the Arnheim Peninsula, found it there in great numbers, and, according to some authorities, it is popularly known as Leichhardt's Rock Pigeon, from the assumption that he was the first to meet with it.

Its range extends from the north-west coast of Australia to the Tableland, where it has been seen roosting among the precipitous rocks of that sterile country. It is one of the few varieties of Rock Pigeon known within the tropics, and is proportionately interesting. Being strictly a ground feeder, the food of this Pigeon consists entirely of grass and other fallen seeds which it can find upon the ground; and, under no circumstances, does it ever voluntarily rise upon the wing unless suddenly alarmed.

Its nidification is very simple, consisting merely of a slight depression in some sandy, sheltered nook, where two eggs are deposited, and the hatching is accomplished by both birds equally, the male relieving the female. The young are unusually precocious, and require but a comparatively short time to become independent of parental care.

The plumage of both birds is identical: back of head and forehead, light fawn, merging into grey; cheeks and throat, white, flecked with fawn; breast, deep fawn; back and shoulders, deep fawn; tail, deep fawn; lesser wing coverts, grey; primaries, deep fawn; secondaries, white; wing-tips, fawn; bill, feet, and legs, brown.

This Pigeon measures, approximately, eight inches from the tip of the bill to the end of the tail.

GEOPHAPS SCRIPTA (*Swainson*).

PARTRIDGE BRONZEWING. GENUS: GEOPHAPS.

THE members of this genus are peculiar to Australia, and in their habits are more terrestrial than any other Australian Pigeons. They also bear a strong resemblance, both in structure and habits, to the Partridge, running and rising like that bird, though immediately they alight on the bare branch of a tree the illusion ceases.

The Partridge Bronzewing extends the range of its habitat over the greater portion of Queensland, the Clarence, Richmond, and Murray Rivers (districts of New South Wales), the Wimmera, Edward, and Murrumbidgee Rivers (districts of Victoria), and the interior of South Australia.

It congregates variously in pairs and small flocks of from six up to fifty, and inhabits the well-watered grassy plains, living on grass-seed and the seeds of the Thistle and Wattle (*Acacia decurrens*).

The flight of this bird is very rapid, and accompanied by a loud "burring" noise of the wings. It also resembles the Quail in the mode of running rapidly along the ground, and seeking seclusion in some scanty herbage that offers any kind of shelter. Here it will remain motionless, crouched close to the ground, until almost trodden upon, and hence the origin of its soubriquet, the "Squatter Pigeon." This manner of defence no doubt served its purpose in hoodwinking voracious enemies at a time when it had no other than natural foes to contend with, but it scarcely meets the artifices of a progressive age, as I had the means of observing on one occasion. I was making a coach journey from Townsville to Charters Towers, and was accommodated with the box seat. As we drove along the coachman pointed out a Squatter Pigeon crouched down in a wheel rut before us, saying it would so lie without moving until the wheel passed over it. To illustrate his remark he immediately changed his course, that he might prove the truth of his statement. However, upon my remonstrances, he desisted from that means of destruction, and consoled himself by killing it with his whip.

The nidification of this Pigeon is conducted on the simplest principles. The eggs—two in number—are laid on the bare ground, and the chicks, like the young of most gallinaceous birds, are independent of maternal care almost from the moment they emerge from the shell. They both run and fly strongly at a very early age.

The coloring of both male and female is in all respects alike; the forehead, back, wings and breast are of the same dull tint of raw umber in the high lights, and burnt umber in the shadows; the irides, cheeks, ear butts, neck and throat are white, mottled with fawn on the outer edges, outlined with dark burnt umber; the abdomen, white, merging into a warm grey on the vent; the bill, legs and feet are light brown.

Size, approximately, from tip to tip, eleven inches and a-half.

GEOPHAPS SMITHII (*Jard and Selby*).

SMITH'S PARTRIDGE BRONZEWING. GENUS: GEOPHAPS.

THIS small species of the family *Geophaps* closely resembles its nearest congener the Partridge Bronzewing in some few particulars, though in its flight, voice, mode of nidification, the character of its newly-hatched young, and its adherence to circumscribed localities, it differs from other members of the genus.

Popularly known as the Partridge, this bird is usually to be found in well-watered grassy flats, or among freshly-burnt bush, and nearly always in small families. Its food is identical with that of the Partridge Bronzewing, and, like the latter, it is almost entirely terrestrial in its habits, only taking refuge in a tree if suddenly alarmed. Like the *Geophaps Scripta*, its flight is accompanied by a loud "burring" sound, and the note of its coo very much resembles that of the Quail; but it is by no means prodigal of sound, so that sharp observation is required to detect its whereabouts, and when conscious of being discovered it will prefer to remain stationary, crouching to the ground till almost trodden upon rather than try to effect an escape, this being the highest form of subterfuge to evade danger its simple mind can grasp. Its habitat extends from the Gulf of Carpentaria to Port Darwin.

The breeding season usually begins in August, and lasts till the end of January, during which period two broods are hatched. The first generally arrives at maturity in November, and the second by the end of January or the early part of February; and, as the process of nidification is carried on in the interior, the coast districts are entirely forsaken by this Pigeon for fully five months of the year. The nest is not of a complex nature, as it is effected by merely smoothing down part of a clump of grass and forming a slight hollow, in which are deposited two greenish-white eggs one inch and three lines long, and ten lines and a-half wide. The chick is covered with down like a young Quail.

In appearance the Partridge is less graceful than many of the Pigeon family, its contour being somewhat short and squat. Size, about seven inches and three-quarters long.

The general colouring of its plumage nearly resembles the *Geophaps Scripta*, though its peculiarities strike the eye at once. The forehead, shoulders, and back are raw umber in the lights, and burnt umber in the shadows; cheeks, warm mottled grey; irides, light red; throat, pure white; breast and under part of the body, deep brown, merging into a spotted fawn on the vent; secondary and tertiary wing feathers, metallic bronze; bill, feet and legs, brownish grey.



G. J. BRODOWSKI, F. C. S.

a. PETROPHASSA ALBIPENNIS (Gould);
White-quilled Rock-Pigeon.

b. GEOPHAPS SCRIPTA (Gould);
Partridge Bronze-Wing.

c. GEOPHAPS SMITHII
Smith's Partridge Bronze-wing

PLATE XI.

LEUCOSARCIA PICATA.

WONGA WONGA. GENUS: LEUCOSARCIA.

IN the group of the granivorous (seed-eating) Pigeons, the Wonga Wonga stands in the foremost rank as a representative of its family. The generic name, *Leucosarcia*, was bestowed upon it because of the whiteness of its flesh, and the total absence of the usual discolouration observable in nearly all other wild pigeons. In size it is far superior to any of its congeners, while as an edible bird of great delicacy, the Wonga is held in such high estimation that many bushmen make their living by trapping and despatching it alive to the Sydney market.

In the Burraborang Valley, a wildly picturesque and secluded spot in the old Sutton Forest District, some eighty miles south-west from Sydney, the Wonga is found in great numbers, attracted by the Black Wattle (*Acacia decurrens*), of whose seed it is inordinately fond. Another favourite food is the dark red-brown fruit of a low growing shrub bearing spiky leaves, which luxuriates among the precipitous cliffs of this region. Here nests have been found placed in a wattle branch growing out from a cleft of the precipitous cliff which forms the ravine.

Like most of its order, the Wonga wastes little ingenuity upon its nest, though its architectural ideas are more advanced than those of the Bronzewing. It usually selects the branch of a Wattle tree, and, gathering a few twigs and bits of grass, puts them loosely together in a shapeless nest, in which two pure white eggs are laid—in size, one inch and a-half long and one inch and a-half wide at the greatest breadth. The period of incubation lasts from August to November, by which time the young ones are grown to be independent individuals. The length of the adult bird is about ten inches and three-quarters.

Unlike the Fruit Pigeon, which finds its food on the tree-tops within a narrow range of its home, and is, therefore, not dependent upon the strength of its wings for subsistence, the Wonga must perforce traverse long distances in search of its daily meal. To meet these requirements Nature has furnished it with strongly-developed wings and pectoral muscles, well adapted to sustain it on rapid flights over extensive tracts of country, when, owing to drought or other caprices of climate, food and water are scarce. When about to fly it rises rather slowly from the ground with a noisy flapping of the wings, but, when once fairly on its way it flies rapidly, making a peculiar whirring sound. Owing to its wandering disposition, the Wonga is a widely-distributed bird, and is found in all the eastern colonies of the Australian continent. It particularly affects Rockingham Bay, Wide Bay District, Queensland; Richmond and Clarence River District, New South Wales; and Victoria.

It is of a shy and retiring disposition, preferring the densely wooded forests and valleys, especially the wattle scrubs of the sea-coast districts, to the plains and open hill-country. It is seldom found near the abode of man, and when known to frequent his vicinity, its nature is modified from the gregarious to the solitary, as it is then only to be met with in twos and threes. It makes a deep soft cooing note when calling to its mate, which breaks upon the ear most musically in the silent forests.

The food of the Wonga consists entirely of seeds; and to this fact may be traced the delicacy of its flesh, which is free from the high flavour noticeable in game birds whose food is less confined to cereals. The seed of the indigenous *Acacia* (Wattle) forms one of its staple articles of food. It may be seen scratching the ground beneath the leafy shade of these graceful trees, or diving deep amid the undergrowth that surrounds the habitation of the Cabbage-tree Palm (*Ptychosperma Cunninghamii*, and *Livistona Australis*) in search of the fallen seeds of that plant—one common alike to the dense fern gullies of the sea coast and the less precipitous tracts of the inland districts. At sunset the flock betakes itself to the nearest creek or water-hole, where but a small quantity is sufficient to allay its thirst. Its presence anywhere may be accepted as a safe indication of water not far distant.

It has been claimed that the Wonga Wonga is essentially a "Cornstalk" (New South Welshman), but that is now a sufficiently exploded notion. The first specimen I met with was one I shot in the Ferntree Gully, Dandenong Ranges, about twenty-two miles from Melbourne.

Not the least attractive characteristic of the Wonga is its plumage, which is a rich soft tone of slate-grey and white; the back, shoulders, and tail, dark grey, with a brownish tinge on the wings, darkening towards the tips; the forehead and throat, a warm white; back of the head and upper part of breast, lighter grey than the back; the cheeks and ear butts, light neutral grey; the breast is a warm white, divided into handsome markings by a dark bib below the throat, and a blade-like band from the shoulders, which has the effect of shaping a white crescent above it; the lower part of the breast and abdomen present a lovely appearance from the regular grey crescent fleckings outlined with white, which pattern the plumage.

The total length from tip of bill to end of the tail is about twelve inches and a-half.

PHAPS HISTRIONICA (Gould).

HARLEQUIN BRONZEWING. GENUS: PHAPS.

THIS bird is somewhat smaller than its congener, the Common Bronzewing, but what it lacks in actual size it gains in the resplendence and variety of its plumage, whence it derives its qualificative name. Almost simultaneously it came under the notice of two of our early pioneers, who were making their explorations in what was then a "terra incognita"—the vast interior. Sir Thomas Mitchell first observed an immense flock of these Pigeons one evening on the banks of the river he called Alice, which is now recognised as the Barcoo, in the south of Queensland, and was so much struck with the beauty of their plumage that he shot and made a drawing of one, which, upon comparison, was found to belong to the genus *Phaps histrionica*.

Captain Sturt, with greater means of observation, speaks thus in reference to the Harlequin Bronzewing: "This beautiful Pigeon is an inhabitant of the interior. It lays its eggs in February, depositing them under any low bush in the middle of the open plains. In the latter part of March and the beginning of April they collect in large flocks, and live on the seed of the rice-grass, which the natives also collect for food. During the short period this harvest lasts the flavour of the Pigeon is delicious, but at other times it is indifferent. It flies to water at sunset, but, like the Bronzewing, only wets the bill. It is astonishing, indeed, that so small a quantity as a bare mouthful should be sufficient to quench the thirst in the burning deserts it inhabits. It left us in the beginning of May, and migrated, I think, to the north-east, for the further we went westward the fewer did we see of it."

So wrote Mitchell and Sturt over forty years ago—the one in the district of the Barcoo, the other in the vicinity of Cooper's Creek, Northern Territory. To the comprehensive epitome of the latter all our later observations have not added much in the matter of real knowledge of its manners and customs. All we know further is to be able to pronounce that it is a wandering bird of extensive range, with a shy and retiring disposition.

Its wandering nature may be judged without the need of observation of its habits from an anatomical analysis of its wing, whose great length gives it a power of volition that makes transition over a vast expanse in an incredibly short space of time a very easy matter.

It is habitually gregarious, feeding on the seeds of indigenous plants and grasses that are seasonable in the districts it frequents. About Port Essington and the Victoria River the Wild Rice is its favorite food; on the hilly country of the Eastern Coast districts it particularly affects the locale of the Native Cherry (*Exocarpus*), not, however, for the sake of the fruit, as it waits till the small jelly-like excrescence is withered and dried, and then eagerly devours the seed growing beyond it.

In its habits it is semi-arboreal, usually flying from the ground for shelter to some low closely-foliaged branch.

Its habitat extends over the Northern Territory, Queensland, New South Wales, interior of Victoria and South Australia, thus leaving only Western Australia uncolonised by it.

This is a handsome plumaged bird, of soft fawn and grey tints, with long legs, and strong large tarsi, light red in colour; back of head, bill and throat, deep grey; forehead, white; irides, white, extending into crook-like marking on side of head; neck, bounded by graduated circular band of white, merging into soft cloud grey on breast and bill; abdomen, light fawn; back, shoulder coverts, and primaries, raw sienna in high lights and burnt umber in shadow; secondaries, metallic bronze; tertiaries, burnt umber; tail, fawn.

Measurement, from tip of tail to tip of beak, nine inches.

PSITTACIDÆ—PARROTS.

ORDER—SCANSORES (Climbers).

THE Parrot family is the third subdivision in the scansorial order, and is by far the largest in numerical strength amongst the groups composing that division. The chief peculiarity pertaining to this family, which has been the primary cause of its inclusion among the *Scansores*, is to be found in the structure of the foot, that—unlike incessorial, or perching birds, which have three well-defined toes in front and a hallux in the back of the foot—has the joint of the hallux developed to such a degree that it serves all the purposes of a toe, and, as the third or ring-toe is inverted and directed backwards, it forms in conjunction with the hallux a counterpoise to the index and middle toes, which are directed forwards in the usual manner. This singular disposition of the toes enables the Parrots not only to climb with the greatest ease, but affords also a powerful means of prehension—a very useful aid in many ways. The foot also performs the services of a hand in eating, for, unlike other birds who only employ the mandibles in feeding, the Parrots hold up their food between the toes while dissecting or separating the edible from the objectionable matter. The peculiar arrangement of the toes referred to is, however, absent in the Ground Parrots, whose feet are formed after the *Incessores*, in conformity with their terrestrial habits.

Another distinguishing feature in the Parrot tribe, which is a further assistance to their climbing propensities, is to be found in their large and powerful bills, the upper mandibles of which are curved, sharp at the point, and much longer than the lower mandibles, which curve slightly upwards, and have a concavity at the end. This peculiar arrangement of the mandibles may be observed in the highest state of development in the Nestors of New Zealand.

The Parrots are the only birds which possess the sense of taste. The tongue being soft, fleshy and sensitive, is invariably brought into contact with food before it is swallowed or rejected.

The *Psittacidæ* are distributed all over the great continental divisions of the globe, except Europe. They are particularly numerous in the tropics, and are found as far south as the fifty-second south parallel.

Of this family the largest species is to be found in South America—the Scarlet Macaw (*Ara Macao*) which measures three feet in length, and is a vivid combination of scarlet, blue, yellow and green. Its antithesis may be seen in the New Guinea Love Bird Parrakeet (*Psittacula pygmaea*), which is not three inches long.

They are invariably monogamous, and make their nests, with one or two exceptions, in holes in trees, and in the rocks; and all the family lay white eggs, varying in number from two to eight. The young ones are hatched naked, with very large heads, and take sometimes as long as four years to get into full plumage. The natural voice of the Parrot is a harsh, shrill scream, but the peculiar formation of the larynx and tongue affords facilities for modulation of sound and the imitation of words. Their food is mostly fruit, seeds, etc., and they can live for a long time without water. In captivity, however, they readily eat whatever is mostly eaten by man; and even under such artificial circumstances are known to live to a great age. There are records of individuals of this family attaining the age of a hundred years.

An ingenious argument has been advanced by Campbell to account for the peculiar nidification of these birds, which seek out the decayed hollow arm of a tree, and deposit their eggs, perhaps, far down the tube. When feeding its young the beak of the parent bird becomes frequently fixed in that of the young one, and ordinarily, in disentangling itself, the young one would probably fall to the ground, instead of which it merely drops back into the nest when the mandibles become disconnected.

Among no other family of birds is there to be found such brilliancy and variety of plumage. The variety is as great a mark of distinction as the brilliancy, for while some of the members seem to monopolise the whole gamut of colours in their own small bodies, others are of one uniform funereal black, or pure white.

The Australian section of the Parrot family is represented by twenty-one genera and about sixty-five species. For the better differentiation of these genera and species, I have thought it as well to place them severally in the order into which they fall by natural classification, and in which they will appear in these volumes. A brief glance will make it apparent that many of these birds are peculiar to Australia—some few to a limited locality in one or other of the colonies.

Genus I., *Microglossum* (Palm Cockatoo); characteristic, extraordinarily developed bill and erect crest; one species. Genus II., *Calyptorhynchus* (Black Cockatoo); characteristic, largest Parrot; seven species. Genus III., *Cacatua* (White Cockatoo); four species. Genus IV., *Callocephalon* (Gang Gang); one species. Genus V., *Leucotis* (Long-billed Cockatoo); two species. Genus VI., *Nestor* (Parrot); four species; one of this species, the Phillip Island Parrot (*Nestor productus*) of New Zealand, has become extinct since 1851. Genus VII., *Ptilinopus* (Winnowers); one or two species. Genus VIII., *Aprosmictus* (King Lory); one species. Genus IX., *Platycercus* (Parrakeet—wanting the *os furcatorium*); fourteen species. Genus X., *Polytelis* (isolated group of Parrakeets); three species. Genus XI., *Psephotus* (Ground Parrakeet—exclusively Australian); six species. Genus XII., *Euphonia* (Grass Parrakeet—exclusively Australian); seven species. Genus XIII., *Melopsittacus* (Warbling Grass Parrakeet); one species. Genus XIV., *Callopsitta* (Cockatoo Parrakeet); one species. Genus XV., *Pezoparus* (Ground Parrot); one species. Genus XVI., *Geopsittacus* (Western Ground Parrakeet); one species. Genus XVII., *Lathamus* (Swift Lorikeet); one species. Genus XVIII., *Trichoglossus* (Honey-eating Lorikeet); three species. Genus XIX., *Ptiloselera* (Varied Lorikeet); one species. Genus XX., *Glossopsitta* (Lorikeet); three species. Genus XXI., *Strigops* (Kakapo); one species.



a. LEUCOSARCIA PICATA (Gould)
White-fleshed or Wonga-Wonga Pigeon.

b PHAPS HISTRIONICA (Gould)
Harlequin Bronze-Wing

PLATE XII.

MICROGLOSSUM ATTERIMUM (*Gray*).

GREAT PALM COCKATOO. GENUS: MICROGLOSSUM.

THE main characteristic that distinguishes this Cockatoo from others is its enormously developed bill, much compressed at the sides and curved at the tip, which is long and very sharp, a provision of nature that admirably adapts it for tearing away the sheath that protects the tender shoots of young palms, a food of which it is extraordinarily fond. The lower mandible is much smaller than the upper, and appears still less from the thick covering of feathers that almost hide it.

In the adjustment of its head feathers the *Microglossum* is unlike any other Crested Parrot, the crest being a hollow circle of tapering feathers that stand up some five inches high over the forehead and shorten towards the back. Being of an irritable temperament, the bird erects his crest on the smallest provocation, which adds much to the sullen ferocity of his generally forbidding aspect. The tail is even and rather long. The tarsi are very short and covered with small scales; the two middle toes are proportionately long, and nearly equal. The front of the throat and cheeks are entirely bare of feathers.

This bird is represented by only one species in Australia, and has the distinctive peculiarity of being the sole *bonâ fide* Black Cockatoo belonging to these regions. Its appearance is saturnine in the extreme; its disposition very shy, though if caught quite young there is no difficulty in taming it.

Of strictly arboreal habits, the Great Palm Cockatoo makes its home among the tree-tops of the densest forests, though it has occasionally been seen on the largest *Eucalypti* of the more open country, resting, apparently, in its passage from one belt of scrub to another. Like the *Calyptorynchi*, this bird has a slow laboured flight, rarely making long excursions. Its food consists of the juicy young stems of the Cabbage-tree Palm and the honey-bearing blossoms of other trees.

The cry of the Great Palm Cockatoo of itself marks it as a distinctive species, for instead of the orthodox shrill scream, it utters a low whistle of one note, which sounds not unlike “nweet, nweet.”

The season of nidification is generally in November, for which purpose a hole in the dead branch of some lofty gum tree is selected, in which the nest is formed of thin strips of bark, and two very white eggs of an unusually round shape are hatched.

It is a purely tropical bird, being found only in Northern Queensland and the Northern Territory, and has been identified at Port Darwin, Port Essington, Norman River, Gulf of Carpentaria, Cape York, and Rockingham Bay.

With the exception of the bare flesh-coloured surface marked with waved red lines round the eye, the uniform colouring is a dull black, except on the wings and crest, where the plumage takes a glossy indigo blue shade; irides, brown; bill and tarsi, bluish-black. In actual size this bird is not so large by a good deal as the Banksian Cockatoo.



G. J. BROINOWSKI F. S. I.

MICROGLOSSUM ATERRIMUM (*Gray*)
Great Palm-Cockatoo.

GENUS CALYPTORHYNCHUS.

THIS is an order of strictly arboreal birds, living on the seeds of *Eucalypti*, *Banksiæ*, and other trees peculiar to the country, and varying this diet by large tree caterpillars. It cannot be classed among the gregarious orders, for it is only to be seen in small companies of from four to six, and each part of the continent has its own special species. The mode of flight is slow and laboured, though at the same time powerful. The voice is a low crying call, quite unlike the usual shrill scream of the Cockatoo. Apart from these general distinctions it possesses two special characteristics: (1) The powerfully developed size of its bill, formed to tear and strip bark from the living tree in search of such food, as the larvæ of insects, which is found beneath; (2) the plumage, which is of a prevailing dusky black tone in the males, while in the females it is a dark brown.

PLATE XIII.

CALYPTORHYNCHUS LEACHII. (*Gould.*)

LEACH'S COCKATOO. GENUS: CALYPTORHYNCHUS.

THIS, the smallest Cockatoo of the genus to which it belongs, has such a diversity of plumage among its individual members that it is not at all uncommon to find five out of a group of eight at odds with each other. The variation is usually found in the feathers of the cheek and head, and in the tail feathers of the two sexes. As a consequence of this vagary, as well as from the fact that it is widely distributed over New South Wales, this species is recognised under numerous names. It affects the ridges and forest country, especially where the *Casuarina* abounds, upon the hard seeds of which it principally feeds.

In its disposition it is far less shy and distrusting than others of the family, so that it is easily killed or captured; and the death or disablement of one member of the small band has the effect of paralysing the rest—they fly round and round the dead or wounded comrade, or perch in a tree close by, perfectly blind to the danger they run, till each one is caught with little trouble.

The powers of volition possessed by this bird are ordinarily slow and laboured, but, if need be, it will rise high in the air and sustain a flight of many miles. Its call varies from a feeble whine to a loud discordant cry. Unlike most of the Parrot tribe, its temperament is not suited to the thralldom of captivity, for, after a short while, it languishes and dies. Its natural food is the seed of the *Casuarina*.

The period of nidification occurs in spring, when two eggs are laid in the hollow of some gum-tree.

The plumage of the sexes is alike, except that the female takes a browner tinge of black and has a band of pale yellow feathers round the throat and back of head; the under feathers of the tail are plain red, while the upper are crossed with bands of wavy black lines and fretted with black. The adult male has a uniformly rusty black plumage, with a broad band of scarlet across the tail feathers, excepting the two centre and the outer ones, which are black; tip of tail, black; irides, brown; bill and feet, black. The young male resembles the adult female.

The length of this bird is about twenty inches.

Habitats: Cape York, Rockingham Bay, Port Denison, Wide Bay District (Queensland), Richmond and Clarence River Districts, New South Wales; Interior, Victoria, and South Australia.

CALYPTORHYNCHUS BANKSI. (*Gould.*)

BANKSIAN COCKATOO. GENUS: CALYPTORHYNCHUS.

HERE we have a species of *Calyptorhynchus* whose sexes vary in plumage, like the *Calyptorhynchus Macro-rhynchus*, to so great an extent, that I have again thought it best to reverse the order of things and represent the female.

It is fitting that the largest Cockatoo should be named after our great pioneer botanist, Sir Joseph Banks, the only objection being that the bird possesses in an eminent degree those neutral qualities of personality which are as condemnatory as absence of beauty. Fine and large though he is—measuring, perhaps, some twenty-four inches—his greenish black coat and saturnine expression are by no means an attractive *tout ensemble*.

This bird's favourite haunts are the groves of the oak (*Casuarinæ*) and honeysuckle (*Banksiæ*) that flourish alike on the sandy sea-shore, inland river, swampy lagoon, and interior hill-country—in the temperate South Coast districts, or in the sandy inland desert. Here it passes an arboreal existence, cracking and eating the seeds of these trees, or, for diversity's sake, perching in a wattle scrub to watch for signs of the presence of those large edible caterpillars, familiarly known as "gubbins" by the natives, who regard them as a great delicacy either raw or cooked. These caterpillars contain a yellow substance closely resembling the yolk of an egg both in appearance and flavour, and make their homes in the heart of the living wattle, preferring a juicy young tree to a toughened old one, and make borings through the stem in their travels. It is the great delight of the Cockatoo to discover traces of these gubbins, and then to set about scooping them out—a proceeding for which the structure of its powerful bill is well adapted.

Moving in small companies of from four to eight, it can by no means be called sociable in its habits. Its journeys rarely exceed a span of more than a few miles at a time, accomplished slowly with laboured flight, and rarely rising above the altitude of some lofty gum-tree.

Like the rest of its family, this Cockatoo seeks out in the breeding season some inaccessible hole in a gaunt dead gum tree, where the hen deposits two or three eggs. The cock-bird takes no share in the tedium of incubation, but is assiduous in his care of the young ones whose voracity demands constant feeding.

The adult male resembles the *Calyptorhynchus Leachii* in all respects, except in size—the one being the largest bird of this family, the other the smallest—and in the colour of the bill, which is black instead of a dark horny shade; so that, saving these two distinctions, a plate of the one may easily stand for a plate of the other.

The plumage of the male is a strong greenish black, with a deep broad band of orange scarlet across the tail, except upon the two central and the external web of the outer feathers on each side, which are black; feet, mealy brown; bill, black—in the young ones the bill is greyish white.

The female is also a greenish black, with the head, back of neck, and wing coverts, spotted with pale yellow; breast feathers irregularly fringed with pale yellow; under tail coverts crossed by freckled bars of yellowish red; tail banded with red, passing into sulphur yellow, tips black; bill, pale yellow. The young male bird differs only from the old one in having some dark bars across the red tail-feathers.

The habitat is a widely-distributed one, the bird having been met with at Cape York (?), Port Denison, Wide Bay District (Queensland), Richmond and Clarence River District (New South Wales), and the Interior.



G. J. BROINOWSKI, F.S.

a CALYPTORHYNCHUS LEACHII.
Leach's Cockatoo

b CALYPTORHYNCHUS BANKSII.
Banksian Cockatoo

PLATE XIV.

CALYPTORHYNCHUS FUNEREUS. (*Gould.*)

FUNERAL COCKATOO. GENUS: CALYPTORHYNCHUS.

IN the Funereal Cockatoo—an unnecessary lugubrious name, by the way, bestowed upon the bird in consequence of their slow manner of flight in Indian file—we have the largest of all known Cockatoos, not even excepting the *Calyptorhynchus Banksii*, which is much about the same size in body, but lacks its tremendous development of tail and expansion of wing, that are unequalled in any other members of its genus. If seen flapping ponderously among the mournful she-oaks (*Casuarinæ*), the Funereal Cockatoo has to a certain extent a fitness of position, but when he disports himself among the delicately-tinted, graceful wattle groves in search of the larvæ he finds under the bark, he does not strike the eye as an artistic success. Still less does he bear out his grief-stricken disposition when he adopts a vivacity of flight that is truly marvellous, diving and shooting, wheeling and turning among the trees as though a thing of life and brightness.

This bird's habitat is general and widely distributed from Wide Bay (Queensland) to Tasmania, but nowhere is it very numerous, nor does it localise itself at any particular spot. It may be found in the open hill country, in the brushes of the mountain ranges, or near the sea shore, where it frequents light-timbered land, perching on the tree-tops till stormy weather sets in, when it retreats inland; but always careless of anything, save the presence of caterpillars and the fruit of the *Banksiæ*, whose seed-covers it easily tears open with its powerful bill for the sake of the contents. Of a wild and shy disposition, it does not live long in confinement.

For purposes of nidification the Funereal Cockatoo selects some decayed giant gum-tree, full of hollows, on whose rotting membranous lining it constructs a rough nest, and deposits two white eggs, measuring one inch seven and a-half lines long by one inch four and a-half lines broad, about the size of a Pigeon's egg. In consequence of this partiality for decayed trees, which are unsafe to climb, it is a difficult matter to obtain much information concerning the period of incubation.

The male is larger than the female, otherwise the sexes are alike. The general colouring of the plumage is a rusty black, which takes a greenish tinge in the males; crest, short and rounded; from behind the eye spreads backwards a pear-shaped spot of yellow; lateral tail feathers, pale yellow, fretted with brown and tipped with black; two central feathers and external web of outer feathers, black; bill and feet, yellowish white.

Total length, about twenty-six inches.

Habitats: Wide Bay District (Queensland), Richmond and Clarence River District (New South Wales), and Interior.

CALYPTORHYNCHUS XANTHONOTUS. (*Gould.*)

YELLOW-EARED BLACK COCKATOO. GENUS: CALYPTORHYNCHUS.

IT is a truth borne out by the experiences of every-day life that the consistency of action is mainly discovered through its inconsistency; why else should the *Calyptorhynchus Xanthonotus* be specialised as the "Yellow-eared" Black Cockatoo, when *Calyptorhynchus Funereus* and *Calyptorhynchus Baudinii* have equally this distinctive mark? The only solution to the question is the simple one of supposing it was a case of "first come first served," and that ingenuity failed of a better distinction when it was proved to be insufficient.

In common with others of its kind, the *Calyptorhynchus Xanthonotus* has the same somewhat laboured flight. On the wing it presents a remarkable appearance from the disproportionate sizes of its short back, rounded head, and long wings and tail. As it flies it utters a strange whining cry, which grows more discordant on the approach of rain; indeed, so marked is this peculiarity that around Mount Wellington in Tasmania the bird is regarded as a sure herald of the approach of rain, for it then abandons its usually high range and descends to the lower country.

Tasmania is the principal home of this Cockatoo, particularly the southern part of the island, where it is plentifully found in the thickly-wooded mountainous districts. It is also to be met with on Flinders Island and in South Australia. Ordinarily it is shy and difficult of approach, both from disposition and dread of the indiscriminate practice of wantonly shooting it whenever the occasion offers, although during incubation it seems to forget its fears, and becomes very tame. The season of incubation extends over the months of October and November, and the whole ceremony of nidification is identical with that of all the rest of this family; the progeny never exceeds two in number, which come into the world in a naked and most forlorn condition. The white eggs have shells of more than ordinarily fine texture, one inch eight lines long by one inch four lines broad.

The food of the *Calyptorhynchus Xanthonotus* consists of the larvæ of several kinds of sheath-winged beetles (*Coleoptera*), seeds of the *Banksiæ*, and large tree-grubs. In search of the latter, which is its favourite food, it displays wonderful ingenuity in stripping the bark from trees, and even cutting through thick branches with its sharp and powerful mandibles.

The colour of the plumage is a shabby black; the crest very small and flat; ear coverts, yellow; tail, a broad band of pale yellow, freckled with black, excepting the tips and the central feathers, which are entirely black; feet and bill, brownish black.



G.J. BROINOWSKI, F.S.T.

a. CALYPTORHYNCHUS FUNEREUS.
Funereal Cockatoo.

b. CALYPTORHYNCHUS XANTHONOTUS.
Yellow-eared Black Cockatoo.

PLATE XV.

CALYPTORHYNCHUS MACRORHYNCHUS. (*Gould.*)

GREAT-BILLED BLACK COCKATOO. GENUS: CALYPTORHYNCHUS.

OF the seven species representing this genus, the *Calyptorhynchus Macrorhynchus* is the largest, measuring twenty-two inches in length, and the acutely-hooked bill is one inch and a-half long by three inches wide.

Although found to inhabit only the Northern part of the Continent, and then in restricted localities, the *Calyptorhynchus Macrorhynchus* is, nevertheless, closely allied to the Black Cockatoo of the South Coast, merely differing from it in the larger development of its bill, which is a provision of nature to enable it to obtain a special kind of food.

The female has the peculiarity of differing entirely from the male in colour, and for this reason the plate opposite shows the female of the *Calyptorhynchus Macrorhynchus* rather than the male, which is exactly like the *Calyptorhynchus Naso*, except in the colour of the bill, which is of a horny tinge instead of bluish grey.

The plumage of the male is a bluish black; the lateral tail feathers, with the exception of the external web of the outer ones are crossed by a broad band of scarlet; bill, horn colour; irides, blackish brown; feet, nearly blackish brown.

The female has a general colouring on the upper part of the body of blackish brown, and the whole of the under part is burnt umber, tinged with yellowish buff; the lateral tail feathers crossed on the under surface by irregular bands of yellowish buff, freckled with black; on the upper surface these bands are bright yellow at the base of the tail, and gradually merge into bright scarlet towards the tip; irides, blackish brown.

Habitats: Port Darwin, Port Essington, Norman River, Gulf of Carpentaria, Cape York, and Rockingham Bay (Queensland).

CALYPTORHYNCHUS NASO. (*Gould.*)

WESTERN BLACK COCKATOO. GENUS: CALYPTORHYNCHUS.

THE recognised habitat of this bird is Western Australia, though the range is not strictly confined to the one territory, for it has been found as far east as South Australia. At all times, except during the breeding season, it may be seen in companies of from six to fifteen, flying slowly from tree to tree, and while on the wing it utters a harsh grating cry not unlike the sound of the name "Banal Banal" bestowed on it by the natives.

For food the Black Cockatoo depends upon the seeds of the *Eucalypti* and *Banksiæ*, materials of such a hard astringent nature that the presence of a strong membranous stomach is at once recognised as indispensable. It is, however, by no means averse to cereals to vary its food, especially Indian corn, which it attacks with such destructive vigour just as the bursting husk reveals the ripened cob, that the farmers regard it as one of the most destructive enemies they have, and are obliged to resort to an organised mode of defence to save their crops.

In common with all its genus, this Cockatoo nests high up in the bole of a dead limb in some gigantic gum-tree, far out of the reach of the prying white man's eyes—so high that even the natives in their palmy days could not be tempted to climb to the well-nigh inaccessible spot. Naturally it follows that none but the most meagre information has been gleaned of its mode of nidification. From evidence gathered by investigating fallen trees, it would seem that the nest is made of the soft crumbling dead wood found in the hollow, on which two snow white eggs are deposited during the latter end of August or early in September.

This species is distinguished from the *Calyptorhynchus Macrorhynchus* by the crest being shorter and more rounded, and the bill smaller, while it is less fierce-looking. The plumage of the sexes differs only in the tail feathers. The male is of a uniform brownish black; the lateral tail feathers, except the external web of the outer one, are barred by a band of scarlet; the two central feathers on the upper side of the tail are entirely black; while the bill and tarsi are bluish black. The female is similar in appearance, except in the colouring of the tail, in which the lateral feathers are a dull scarlet crossed by irregular freckled bands of black, narrow at the base, and gradually increasing in size towards the tips. The external web of the outer feathers and the tip of the entire tail are black. This is a large bird, measuring nearly twenty-two inches in length.



G. J. BROINOWSKI, FET

a. CALYPTORHYNCHUS MACRORHYNCHUS.

b. CALYPTORHYNCHUS NASO.

Great-billed Black Cockatoo.

Western Black Cockatoo.

PLATE XVI.

CALYPTORHYNCHUS BAUDINII. (*Vil.*)

BAUDIN'S COCKATOO. GENUS: CALYPTORHYNCHUS.

FAMILIARLY known as the White-tailed Black Cockatoo, this bird presents few variations in appearance or disposition from *Calyptorhynchus Funereus* or *Calyptorhynchus Xanthonotus*. Its slow laboured flight is sufficient warrant for its restricted habitat, though, within that limit, it is generally distributed over the whole of the western part of Western Australia, particularly in the neighbourhood of Swan River. Further east the increasingly sterile nature of the country militates against the ready growth and productiveness of the *Eucalypti* and *Banksiæ*, whose seeds are its principal food; this explains why the bird has not spread itself over the continent.

Of a retiring disposition, it loves the quiet of a dense forest, where it may climb unmolested among gum-trees and honeysuckles in search of the larvæ of moths and beetles which it extracts from the bark; or it hops along the ground picking up fallen seeds—thus it is both arboreal and terrestrial in its habits. Remarkable as being the smallest Cockatoo of any known member of the genus *Calyptorhynchus* yet found in Western Australia, it has also a distinctive feature in the white marking of the tail feathers.

While flying this bird utters a note similar in sound to the name bestowed upon it by the native blacks, “Oo-läak.” Immediately it perches on a tree the note is exchanged for a harsh croak, which is kept up all the time it is feeding.

Among this family the breeding season extends over October, November and December, when the pairs retire to the most secluded parts of the forest, and choose a very high white gum-tree (*Eucalyptus redunca*), where they easily find a hole or hollow knot in which to lay their eggs, usually two in number and perfectly white, measuring one inch nine lines long by one inch four and a-half lines broad.

As the beauty of a Cockatoo consists in the gorgeousness of its plumage rather than in its form, it is a foregone conclusion that this particular species can lay little claim to admiration on that score, while the small, stiff flat crest, the spiteful eye and generally cruel contour of the head add considerably to its unattractiveness.

The plumage of both sexes is a rusty black, with faint yellow markings on neck and breast; and a pear-shaped tuft of yellowish-white feathers behind the eye; the long oval tail is entirely white, framed in a narrow fringe of black. The only difference in the female is that the yellow colouring is much more accentuated, as it outlines the whole plumage; the feet are brown and scaly; the beak is bone colour.

Habitat: Western Australia.



G. J. BROINOWSKI, FRS

CALYPTORHYNCHUS BAUDINII.
Baudins Cockatoo.

GENUS CACATUA.

THE homes of this genus are Australia, the Molucca and Phillipine Islands, and New Guinea. It is of a shy, retiring disposition, preferring the quiet of distant forests to the neighbourhood of human habitations.

Both arboral and terrestrial in its habits, it is to be found among lofty tree-tops, on the borders of rivers, located in swamps, or affecting the isolated trees of plains and cleared land. The cry is a harsh scream, which is much augmented in volume if the genus is gregarious, for then the whole flock utters a simultaneous shriek. The generic attributes are a generally large, strong bill, varying in length, broad at the base, and more or less compressed at the sides; the culmen is much arched at the tip, which is very acute; wings rather long and pointed, with the second, third, and fourth quills nearly equal and longest; orbits, bare, but to a greater extent below than above the eye, and varying slightly in size. Food, vegetable substances, such as hard seeds, tuberous roots, and the larvæ of insects. They usually swallow large stones along with food. Nests are sought in the holes of trees or in fissures of rocks; the number of eggs laid, two; the colour, white.

PLATE XVII.

CACATUA GALERITA. (*Vieill.*)

GREAT SULPHUR-CRESTED COCKATOO.

IT has been asserted by several ornithologists that the crested Cockatoos of the continent of Australia, of New Guinea, and even those inhabiting Tasmania are separate and distinct species, but the only warranty for these assumptions is based upon the decided difference existing in the shape of the bills of the New Guinea birds and those of Australia. If, however, such a slight difference is sufficient to establish a distinction, species could be multiplied into almost untold numbers. By far the most reasonable hypothesis is that assumed by the late Mr. Gould, that the difference is "merely a modification of the organ for the peculiar kind of food afforded by the respective countries. The Tasmanian bird, which is the largest in every respect, has the bill, especially the upper mandible, less abruptly curved, exhibiting a tendency to the form of that organ in the genus *Licmetis*. The bill of the New Guinea bird is much rounder, and is in fact fitted to perform a totally different office from that of the Tasmanian Cockatoo, which subsists principally on the small bulbs of the terrestrial orchidacea, for procuring which its lengthened upper mandible is admirably adapted; while it is more than probable that no food of this kind is to be obtained by the New Guinea bird, the structure of whose bill indicates that hard seed, nuts, etc., constitute the principal part of its diet. The crops and stomachs of those killed in Tasmania were very muscular, and contained seeds, grain, native bread (a species of fungus), small tuberous and bulbous roots, and, in most instances, large stones." Taking it for granted that the Crested White Cockatoo of Australia, Tasmania, and the Pacific Islands is identical in character and species, then the extent of its distribution exceeds that of almost any other bird. It is of a gregarious disposition, moving about in extensive flocks, to the dismay of the farmers, upon whose newly-sown and ripening crops of wheat and maize it commits irreparable injury; its voracity is almost illimitable, and only equalled by its cunning. Generally it is one of the noisiest birds in the bush, its harsh, grating screams are most irritating, and never fail to elicit expressions the reverse of complimentary from the bushmen; yet when on a depredatory excursion an immense flock of them will settle upon a field without a sound and commit their havoc in complete silence, whilst invariably one of their number is perched upon a tree on the look-out, and the instant a man appears it emits a low warning scream, when the whole flock rises *en masse* and wings its way to safety before a gun can be properly pointed at them, choosing by preference, when they can, the whitened skeleton of a gaunt dead gum tree, to which they cling in every conceivable posture, perching along horizontal branches, climbing by beak and claw up the vertical stem, or sitting slantwise on a sloping bough.

In captivity the Cockatoo becomes easily domesticated, and proportionately destructive. Nothing comes amiss to its powerful, ingenious beak, which seems to concentrate within its mandibles the whole functions of a carpenter's kit; it will grind off the carvings of a cabinet with as much facility as it will pick out the stuffing of a saddle. It is, however, not all bad; if kindly treated it becomes very affectionate, and its clever antics and linguistic capabilities, besides its attractive snowy white form, are a full compensation for its mischievous propensities.

For breeding purposes these birds are dependent upon locality in the choice of their nest; it may be in the hollow limb of a gum tree or in the fissure of a rock, where two pure white eggs are laid, elongated in shape. Down the Murray, where white cliffs border the river's edge, the whole face of the cliffs is honeycombed by the nests of these Cockatoos, who return there year after year for the special purpose of depositing their eggs in the crevices.

All the plumage of the body is white, slightly tinged with yellow on the upper and under parts of the wings; the crest, which consists of thirteen acuminate feathers in the adult male and twelve in the female, is of a bright chrome-yellow, lying back from the forehead in quiescent moments, but rising in a semi-circular coronal in times of irritation or pleasure; irides, white; eyes, black; beak, blackish grey; feet, grey. No difference is perceptible in the sexes beyond that already mentioned.

Habitats: Queensland, New South Wales, Interior, Victoria, South Australia, South Coast of New Guinea.

The illustration is about three-quarter life size.



G. J. BROINOWSKI.

CACATUA GALERITA (Vieill)
Great Sulphur-crested cockatoo.

PLATE XVIII.

CACATUA LEADBEATERI. (*Gould.*)

LEADBEATER'S COCKATOO.

IT has been averred that we possess no migratory birds—that is, migratory in the strictest meaning of the word, there are many wandering families, but none coming clearly under the specific class migratory. It is so as a rule, but exceptions exist even among the usually local tribes of parrots. Both the Leadbeater and the Sulphur-crested Cockatoos make yearly visits to special localities for purposes of incubation—and what is this but migration?—the latter to the Murray, as has already been mentioned, the former to the Toodyay District (Western Australia) and to Gawler (South Australia).

The ordinary habitats of this species are the inland portions of the Australian Continent; it never approaches the sea coast, preferring the belts of lofty gums and dense scrubs that clothe the inland river banks. Its food is identical with the *Cacatua Galerita*.

In disposition it is shy and suspicious, and lacks entirely that sprightly animation which characterises most of the group to which it belongs. It is much less noisy than the *Cacatua Galerita*, uttering a more plaintive cry destitute of the harsh, grating quality so noticeable in that species.

This is quite the most beautiful of all the Cockatoos, being a harmony of delicate rose pink and white, with a handsome crest of acuminate feathers barred in crimson, yellow, and white. In consequence of its great personal beauty, the *Cacatua Leadbeateri* is very popular as a pet, and bears captivity well, though it is neither docile nor intelligent, but invariably remains wild and suspicious after years of captivity, and much given to screaming. Nor does it ever breed among artificial surroundings.

Nidification is carried on with more secretion by it than by most Parrots. It will penetrate the hollow trunk of a dead black butt (*Eucalyptus Pilularis*) to the distance of five or six feet, and deposit two white eggs in a depression made in the vegetable mould far from the glare of daylight. During incubation this bird has a habit of resorting to a tree close at hand, where it spends its time, first stripping off the bark and tiny branches, and then cutting them into minute pieces, which are recognised by the natives as “Co’ tora,” or a sure indication of a nest close at hand.

The sexes are nearly equal in size and appearance, though the plumage of the male is much more intense in colour throughout, while the yellow spots in the crest of the female are more conspicuous and better defined. But the safest indication of sex is the colour of the irides, which are reddish brown in the females and jet black in the males. The whole of the breast, lores, back of head and under wings rose-pink; base of crest, pale pink shaded with white; acuminate feathers of crest, alternately crimson, yellow, crimson and white; back, wings, and tail, pure white, with faint sulphur-yellow under tail and vent; forehead, crimson, shading into rose; orbits round eyes, white; tarsi and beak, grey.

Habitats: New South Wales, Interior, Victoria, South Australia, Western Australia.

The illustration is about three-quarter life size.



G. J. BRIDGEMAN F.S.T.

CACATUA LEADBEATERI (Vig.)
Leadbeater's Cockatoo.

PLATE XIX.

CACATUA SANGUINEA. (*Gould.*)

BLOOD-STAINED COCKATOO.

THIS is a very lovely bird, of gregarious habits, found in immense flocks of thousands in Queensland and New South Wales. It loves best wet, grassy localities and swampy country, where various kinds of orchids flourish abundantly, the roots of which it digs up to feed upon.

Very often it is found associating with the *Cacatua Galerita*, and is not unlike it in appearance, though much smaller. Other and more nearly allied congeners are the white Cockatoos of the islands off the north coast of the continent as far as the Phillipine Islands, though none are identical. In disposition it is very shy and wary of approach.

The sexes are alike; and the young bird only differs from the adult in the softness of its bill.

The general plumage is white; the basal portion of the features of the lores and sides of face are stained with blood-red patches; the wing coverts, secondaries, tertiaries, and primaries, and the upper portion of the feathers under the tail are faintly flushed with yellow; tarsi, large and strong; crest, a stiff white cap.

Habitats: Port Darwin, Port Essington, Gulf of Carpentaria, Norman River, Cape York (Queensland), New South Wales, Interior as far south as Palmer River.

The illustration is about three-quarter life size.

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G. J. BRONKHORST

CACATUA SANGUINEA (Gould.)
Bloodstained Cockatoo.

PLATE XX.

CACATUA EOS. (*Less.*)

ROSE-BREASTED COCKATOO.

FROM the ready manner in which this very lively bird adapts itself to captivity, as well as from its hardihood, it has been comparatively easy to collect a mass of interesting facts in connection with it. Under natural conditions of life, the Rose-breasted Cockatoo is very evenly distributed over the continent in those districts which do not rise higher than six hundred feet above the sea level. It has never yet been seen in the neighbourhood of the Darling, though its favourite food, the salt-bush (*Salsolaceæ*), is abundant about that river's banks.

The northern type of this bird is considerably larger than the more southern one, its colouring deeper, and the bare surface round the eye more extended; while there are some anomalous characteristics worthy of notice, common to the whole species, pointing to that modified chain of causation which develops varieties, and gradually introduces coherence among diverse groups. The long tail and hawk-like wings seem to point to its true position among the *Platycerci*; but, inasmuch as it has the power of elevating the short round head-feathers that take the place of a crest, it is classed with the Cockatoos.

With the exception of the *Cacatua Leadbeateri* this is the most beautiful of all the Cockatoos, but as a pet it is stupid and uninteresting, possessing neither docility nor intelligence, is most destructive in its habits, tearing and gnawing everything within its reach, and has a most unpleasant odour, while its screaming propensity increases in captivity, unless a pair is kept, in which case it is found that conjugal companionship has a soothing effect; on the other hand, it is very hardy, bearing both cold and confinement well.

This Cockatoo is mentioned by most of the early explorers. Oxley and Sturt saw it in the country north-west of the Blue Mountains, Sir Thomas Mitchell under Nandewar Range, and the officers of the "Beagle" both saw and procured specimens of it in the tropical parts of Queensland, where it is most numerous. Wherever it has been met with in flocks, the peculiar mode of flight has at once struck the beholder with admiration of its singular grace and beauty. Instead of the undulating wave-like motion of ordinary parrots in flying, this species makes a complete evolution, turning *en masse* in the air, so that the rosy breasts present the appearance of a deep rose cloud at one moment, and at the next there is the sheen of silver-grey backs to be seen.

It is gregarious, feeding in large flocks of from fifty to two hundred, and has a very rapid flight. Its scream is simply ear-piercing, so that its neighbourhood is not long kept a secret. If happy, its note is a contented warble, but if alarmed or irritated it will set up screams and shrieks of hideous fiendishness.

This is a true dandy, for it seems to be always occupied in preening and dressing its feathers. It may be on this score that it so sedulously retires to the deepest shades to avoid the heat and glare of midday, lest its gorgeous plumage should be faded by the sun's too ardent beams. It is a wonderful gymnast, twisting, turning, and performing airy evolutions with perfect grace.

The principal food of this species is the salt-bush (*Salsolaceæ*), but failing that the seeds of the eucalyptus, acacia, the sheoak, and kangaroo grass do not come amiss.

After the custom of the rest of the *Psittacidæ*, the spot chosen for nidification is a hollow in a gum tree. The eggs are three in number, one inch and a-half long by one inch and an eighth broad. The young ones are hatched in twenty-one days, and are covered with long fine downy feathers, which are soon replaced by the feathers that characterise the adult bird.

The sexes do not vary in appearance, though they can be readily distinguished from each other by the colour of the iris, which is chestnut-brown in the female, and black in the male; but individual members differ considerably in the depth of the rosy tint of the under surfaces, and the extent of the bare irides.

Plumage, breast and neck, rose-colour; crest, pale pinkish-white; back, wings, and tail, warm ashen grey; outer web of tertiary and tail feathers, dark-brown; bill and feet, very dark grey.

Size, fourteen inches.

Habitats: Port Darwin, Port Essington, Gulf of Carpentaria, Queensland, Interior, New South Wales, Victoria, South Australia.

GENUS CALLOCEPHALON.

THIS is a very curious genus, possessing only one species, which, though nearly allied to the *Calyptorhynchus* *Macrorhynchus*, has attributes adapted for some particular mode of existence not yet clearly understood.

It is short and thick-set, and has a very powerful bill. The sexes are similar in colour, except for the hue of the filamentous crest, which is scarlet in the male, and grey in the female.

CALLOCEPHALON GALEATUM. (Gray.)

GANG-GANG.

TO those acquainted with the eastern coast of Australia the discordant grating cry of the Gang-gang, as it breaks upon the silence without premonitory warning from some adjacent tree-top, is an experience in ugly sounds not easily forgotten.

Of a gregarious disposition, these birds are usually found in large flocks, feeding upon the berries of the *Eucalypti*, but as cultivation advances they show so strong a preference for cereals that they become a very nightmare to settlers and farmers. When caught young they are easily tamed, and seem as happy in captivity as when free, though the home is no longer among the loftiest branches of gum trees, but restricted to a cage or a pole, where they climb ceaselessly, gnawing at whatever comes in their way.

In respect to nest-building, they do not adopt quite the same mode as other Cockatoos. Instead of diving into the gloomy depths of a perpendicular hollow they seek out a horizontal hollow in some lateral branch where a certain amount of light can penetrate, and there deposit two white eggs.

This bird is very remarkable in the direct contrast and harmony of the colours of the plumage; while the entire body is a brownish grey, each feather faintly fringed with white, the cheeks, head and crest of the male bird are of vivid scarlet. The crest is unique, both in the crescent curve of the acuminate feathers which rise thickly over the forehead, and in the presence of a wavy filamentous fringe which connects the separate feathers with a cobwebby lightness that is very lovely; the breast tinged slightly with red during the breeding season, is at others uniformly brownish grey; beak, horny yellow; feet, dark grey. The female is slightly smaller than the male, shows more white among its plumage and is generally shabbier. The crest is grey instead of red.

Habitats: Wide Bay District (Queensland), New South Wales, Victoria, Tasmania.



a CACATUA EOS (Less) *b* GALLOCEPHALON VALEATUM (Goy)
Rose-breasted Cockatoo Cassin's

J. H. BROWN DEL.

GENUS LICMETIS.

THIS is a sub-family, possessing only two known species, which are confined in habitation solely to the Australian Continent, and occupying entirely different localities. The *Licmetis Tenuirostris* ranges over all the colonies except Western Australia. The *Licmetis Pastinator* is restricted to that division. Allied to the *Nestors* in shape, but of a quieter, less restless disposition, the characteristic features of this genus are their nearly uniform white colouring, and the peculiar formation of their bill, adapted for procuring food on or in the ground. Live in trees growing by rivers, or on the edges of swamps. Food, the tuberous and bulbous roots of plants they dig up from the ground, often at a considerable depth. Voice, less harsh and more plaintive than among other Cockatoos.

PLATE XXI.

LICMETIS NASICUS. (*Wag.*)

LONG-BILLED COCKATOO.

THIS species is met with in large flocks, flying rapidly, or busy among the edges of swampy ground, digging up the tuberous roots of orchidaceous plants, upon which it principally lives. In disposition it is very irritable, and grows dull and morose in confinement. It has the same peculiarity of getting over the ground in a succession of hops as the *Cacatua Galerita*, only its movements are quicker.

In its manner of nidification it adheres to the laws of its family, but is more careful in choosing a hollow trunk of some dead gum tree, at the bottom of which room is found to deposit, on a layer of rotten wood, two white eggs about the same size as those of *Cacatua Galerita*.

The sexes present no difference in appearance. As regards its general appearance it differs from the *Licmetis Nasicus* in its slightly warmer colouring; the lores are scarlet; base of feathers of the head and front of neck, scarlet, which shows through and gives the effect of staining—for the rest there is no difference.

Habitats: Gulf of Carpentaria, Queensland, New South Wales, Interior, Victoria, South Australia.

LICMETIS PASTINATOR.

THIS, the second variety, approaches so nearly to the *Licmetis Nasicus* in its mode of life and characteristics that, at first glance, they might be supposed to be identical. However, its isolated habitat, and the greater development of its bill, entitle it to rank as an independent species, though I do not consider the difference sufficiently marked to warrant a special illustration.

The general plumage is white; crest, small and tinged with pale red at base; inner web of primaries, other wing feathers and tail coverts, sulphur yellow; bare space round eye, cobalt blue; irides, light brown; bill, horny colour; feet, dark grey.

Habitat: Western Australia.



G. J. BROINOWSKI FSC

LICMETIS NASICUS (Wag.)

Long Billed Cockatoo

GENUS NESTOR.

THIS genus of the *Psittacidae* family, consisting of four species, which approximates somewhat to the *Nestors* (hence the distinguishing appellation), has only been found in the insular regions of New Zealand and Philip Island (in the latter the species is now extinct).

It differs from other genera in having the bill much lengthened and compressed into the base of the lower mandible, hidden in great part by projecting feathers; the wings are long, the tail moderate in length and even at the tip.

Buller, our highest authority upon New Zealand birds, says, in speaking of these birds, "To M. M. Blanchard and Pelzelen belong the credit of having first determined the true affinities of the genus *Nestor*, assigning it a station in the sub-family *Trichoglossinæ*, or honey-eating Parrots. It bears a close relation to the Australian Lories; and the New Guinea form known as Pecquet's Parrot (*Dasyptilus Pecqueti*) appears to exhibit the transitional or connecting link between those two well-known groups. In habits and structure the members of the genus *Nestor* are true flower-suckers, the tongue being furnished with a brush-like development for that special purpose. The common Kaka is a type of the genus.

PLATE XXII.

NESTOR NOTABILIS.

KEA, or MOUNTAIN PARROT. GENUS: NESTOR.

THIS Parrot is remarkable as the largest and most interesting of the four species of *Nestors* at present known. Closely allied to its congeners, *Nestor Productus* and *Nestor Hypopolius* (*Meridionalis*), it differs from them, (1) in its greater size, (2) in its more uniform colouring, (3) in the yellow-toothed markings of the inner webs of the primaries and secondaries, in the orange-toothed markings of the inner web of the tail feathers, and (4) the yellow colouring turning to orange at the base of the under mandible.

The Kea delights in the solitude of the mountain fastnesses of the South Island of New Zealand, where it lives abundantly on the honey-bearing flowers of the region so long as they are in season. When those disappear to give place to the berries of such shrubs and plants, as the close-growing *Coprosma* (a species of five-corner), the trailing *Pinellius* (*Drapetis Tasmanica* ?), and the sharp leaved *Leucopogon* (*Drupaceous Epacrid*), it still finds the necessities of life easily attainable. But when the hard Alpine winter sets in, and the mountains are snow-capped far down their sides, food supplies either decay or are hidden under the snowdrifts, then the Kea finds it must descend to the lowlands in search of the means of subsistence.

But to enter fully into the *entourage* of this interesting bird, one must see it as Mr. Potts did, and as his description is masterly in its graphic completeness, I must be forgiven if I introduce it here. "The home of the Kea is amongst holes and fissures in almost inaccessible rocks, in a region often shrouded with dense mists or driving sleet, where the north-west wind rages at times with terrible violence, here the Green Parrot may be observed, entering or leaving crevices in the rocks, or soaring with motionless wings from peak to peak, far above the screaming Ka-ka or the chattering Parrakeet. The swift-winged Falcon is perhaps the sole intruder into its wild domain In the moonlight nights of winter, numbers have been observed on the ground feeding During winter the Kea gradually descends the gullies where a certain amount of shelter has encouraged the growth of the Rowhai, that yields its supply of hard bitter seeds, the beautiful *Pittosporums*, with their small hard seeds packed in clusters, and the black-berried *Aristotelia*; these and numerous other shrubs and trees, such as the pitch-pine *totera*, furnish the means of life to the Parrot."

Of an adaptive disposition, it readily learnt that the beef and mutton hanging on the gallows of the settlers were edible food of the first order, and, failing these, the sheepskins themselves were not to be despised. The taste once implanted, the Kea went further and preyed upon the live sheep, though it has never been known to do so below an altitude of 4000 or 5000 feet. The mode of attack is somewhat after this fashion:— Singling out a sheep that has strayed a little from the flock the birds settle upon it one at a time, each tearing away a tuft of wool and a piece of skin. They prolong the attack until the persecuted animal, separated from the rest of the flock in its endeavours to free itself from its tormentors, lies down from stupor, exhaustion, and a desire to save its back from fresh wounds; then they perch upon its side and tear that, and unless help arrives the animal frequently dies from its injuries. Thus we see from the omnivorous character of their tastes, the Keas rank among both vegetarian and carnivorous birds.

Dr. Hector found the Keas rather plentiful in the Snowy Mountains of the Otago Provinces, and so tame that it was quite easy to knock them over with a stone. They have the same peculiar mode of locomotion as the Ka-ka—a hopping rather than a walking step. Their vocal powers are far in advance of those of most of the Parrot race, for they have three distinct modes of emitting sound: (1) a mewling cry, (2) a short whistle, and (3) a suppressed scream, so like the notes of the Ka-ka as to be hardly distinguishable from it.

Nothing is known of their breeding habits, though it is a tolerably safe inference that they make nests in the crevices and crannies of rocks among the wild Alpine regions they inhabit. Despite the loneliness of the snowy regions in the South Island, the Kea has none of the retiring diffidence supposed to be bred by such solitude; it has, on the contrary, an all-sufficiency, and self-unconsciousness that are amusing, if a little annoying. Possessing a spirit of mischievous inquisitiveness, for which enterprise is a mild term, it has been known to enter a shepherd's hut by the chimney during the owner's absence and systematically overturn and destroy everything that came in its way, rending clothes and blankets, upsetting tins and dishes, tearing away at the wood of window sashes in its efforts to effect an escape, and only careful to spare nothing in its depredatious expedition.

Of semi-nocturnal habits, it is nearly as active by night as by day, and specially utilises the moonlight to hunt for food on the ground—a fact which further tends to prove that it is not strictly arboreal.

Habitat: South Island, New Zealand.

The entire plumage of this bird is an olivaceous green, deepening to brown about the head, and paling to drab on the under tail feathers; the secondaries and tertiaries are a dull pale blue fading to olive green; irides, brown; beak and feet horn colour.



NESTOR NOTABILIS
Kea Parrot

PLATE XXIII.

NESTOR HYPOPOLIUS. (*Gould.*)

KA-KA or *BROWN PARROT*. GENUS: NESTOR.

THE Ka-ka or Brown Parrot of New Zealand is at once the commonest, noisiest, sprightliest, and most sociable of the genus. Semi-nocturnal in his habits, he usually remains quiet and concealed during the heat of the day, but before sunrise and after sunset he fills the air with his noisy screams. Dr. Thomson writes of him:—"The Ka-ka is a large brown parrot, well known to bush travellers. Before sunrise, and at sunset, these parrots assemble on trees yielding them berries, and fly with discordant screaming over the forest. At the sound of the Ka-ka's harsh cry native travellers commence their journey, and the saying of 'The Ka-ka has cried' is synonymous with 'It is time to get up,' or 'The cock has crowed.' The Ka-ka lays five white eggs in the holes of trees. It cannot be taught to imitate the human voice, or to act as a decoy bird to ensnare its kindred."

Unless frightened from their lair the Ka-kas remain quiet till the cool of the evening twilight, when they come forth clamorously, and wing their way far above the tree-tops to some favourite feeding place, or they can be seen climbing the rough vine-clad boles of trees, using their powerful mandibles as a means of propulsion, turning and twisting themselves into every variety of attitude as they go; or one finds them on the ground tearing up the roots of the close parasitic vegetation in search of insects or their larvæ. Always active, these birds seem to become additionally so during gloomy weather; and even in bright sunshine a flock of them may occasionally be seen circling above the tree-tops, emitting shrill screams, and apparently absorbed in merry-making. In the twilight they can be heard calling to their comrades in a harsh rasping note, not unlike the syllable "t'chut, t'chut," or uttering a musical whistle, with a short refrain.

As a fraternity they exhibit great affection for one another. Should a stray one be wounded its cries will rouse the whole company of Ka-kas within hearing, and they instantly come to the rescue. Dr. Julius Von Haast, in writing of New Zealand birds, says "The noisy Ka-ka (*Nestor Meridionalis* or *Hypopolius*) plays a conspicuous rôle in the forest. It is a gregarious bird, perching generally on the highest trees; but as soon as the assembled flock hear a noise unknown to them they approach, amusing the traveller by their various quarrelsome notes and shrieks. If, in shooting after them, one only is wounded, so that it may be secured, it is an easy matter to shoot one after the other, as they always come back when they hear the cry of their wounded companion."

Of arboral habits, this Parrot is, probably from the quality of its food, a most useful agent in the economy of Nature; that food being fixed in its kind by the seasons. During spring and summer, when there is an abundance of vegetable growth, he may be seen alternately feasting on various juicy berries—whereby he propagates fresh plants—or sucking honey from the crimson-flowered rata (*Metrosideros robusta*)—by which means he fertilises blossoms. When the frosts and snows of winter close these prolific store-houses he falls back upon insects and their larvæ, thus keeping down the increase of *insectivora* to its proportioned limit.

This species, as a whole, is remarkable for the depth and brilliancy of its colouring; at the same time, a great diversity exists in individual members, both in plumage and size. Some have much bluish-grey on the back of the head, neck, and wings; others show the hoary head of real *Nestors*; others again have well-defined collars of fringed feathers at the back of the neck.

In consequence of this diversity, Dr. Buller has considered many closely-allied *Nestors* as merely aberrant types of *Nestor Hypopolius*, and classes them as mere varieties of the common Ka-ka. Of them, *Nestor Superba*, *Nestor Esslingii*, and *Nestor Montanus* are the most remarkable. The latter is very large, measuring some twenty inches long. To all those varieties are attached Albino specimens, some of which are nearly pure, when the plumage is a general ashy white, tinged with yellow, and having a good deal of scarlet about the lower part of the breast, abdomen, and tail; and the back is scarlet, outlined with ashen grey.

The Albinos are highly prized by the natives, who will undergo any trouble to capture one alive. Dr. Buller gives, as an instance of this peculiar veneration, the following anecdote:—"A 'Ka-ka-Korako' was seen by a party of Rangitane, in the Upper Maniwatu, and followed through the woods as far as the Orona River, every effort being made to take it alive. The Orona people (of another tribe) then took up the chase, and followed the bird to the foot of the Ruatime Range, and although carrying guns, to their infinite credit, they allowed it to escape rather than shoot at it, in the remote hope that it might hereafter reappear in their district."

The same authority says of them:—"When migrating from one part of the country to another the Ka-kas travel in parties of three or more, and generally at a considerable height, their flight being slow and measured, and their course a direct one. They occasionally alight, apparently for the purpose of resting, and in a few minutes resume their laboured flight again. On these occasions the bleached and bare limbs of a dry tree are always selected, when one of the requisite elevation is within reach, as affording most fully that which they appear to delight in—an unobstructed prospect."

Though so numerous through the North Island, the Ka-kas are not plentiful north of Auckland, although the food they most affect is there in abundance.

The only difference noticeable in the sexes are the smaller size and less brilliant plumage of the female. The number of eggs laid at a time is five, white in colour, and of an ovoid shape, measuring one inch nine lines long, by one inch three lines wide at the larger end.

Description of plumage: Forehead, grey; cheeks and chin, pale red; ear coverts, yellow, tinged with red; neck and back of head, grey, forming a collar round the throat, which is succeeded by another collar of ferruginous red, extending on the breast as far as the abdomen, where it deepens into crimson; shoulders, back, and wing coverts, brown; primaries pale blue, merging into brown at the tips; secondaries and tertiaries, dark metallic green; tail, brown, strongly toothed with red on under surfaces; irides, black; beak and tarsi, dark-grey. Size of bird, nineteen inches and a-half long.

Habitats: North and South Islands of New Zealand.

NESTOR ESSLINGII.

PRINCE OF ESSLING'S PARROT. GENUS: NESTOR.

VERY little is yet known of the habits of this bird. Its range is limited to the west coast of the South Island of New Zealand, among the precipitous woody cliffs in the neighbourhood of George Sound, and from thence along the coast to Milford Sound. It is essentially a bird of the mountains and highest altitudes, as is proved by the fact that it has never yet been seen in the lowland forests. In its habits it is more active than the common *Nestor*, and its flight is more hawk-like in its direct rapidity; sometimes in the act of flying it will make a sudden swoop to the ground after a manner totally unlike the Parrots in general. The cry it utters is more shrill and wild than that of the Ka-kas.

Till a very recent date it was generally supposed that this species was not only the finest bird of its genus, but of the whole Parrot family; the observations of Dr. Hector, however (who himself obtained the only two specimens known to Buller), have partly destroyed that erroneous notion, for instead of being larger, he has proved that it is appreciably smaller than the other *Nestors*; its bill is more slender, and the upper mandible is reduced to a finer point. The general colouring of the plumage is like that of the *Nestor Productus*, though it differs both from this Parrot and from *Nestor Hypopolius* in some few particulars. They each have the tail feathers strongly toothed with red on the under surfaces; the *Esslingii* has no such marks, and the toothing on the inner webs of the primaries is less clearly defined, the light-coloured interspaces being more freckled with brown.

It was long a moot point with our most eminent New Zealand ornithologists whether this species should be treated as a distinct one, or merely as an aberrant variety of *Nestor Meridionalis*, but at length Dr. Finsch and Dr. Buller have decided to treat it as an accidental variety of the common Ka-ka, differing only about the breast, which is grey with brown terminal margins, and a broad yellowish-white transverse band straight across the abdomen.

Habitat: West Coast of the South Island.



a NESTOR HYPOPOLIUS (Gould)
Ha-Ha Parrot.

NESTOR ESSLINGII
Prince of East Parrot.

PLATE XXIV.

NESTOR PRODUCTUS. (*Wagl.*)

PHILIP ISLAND PARROT. GENUS: NESTOR.

IN speaking of the fauna of the south-eastern part of insular Polynesia, particularly of New Zealand and the islands contiguous, it soon becomes apparent that we are dealing with the remnants of an extremely ancient fauna, whose very types are now on the eve of extinction, and before many years must be entirely effaced from the globe, leaving only the stuffed specimens preserved to us through the care of our museums as a link to the past.

Even within the short hundred years since the discovery of Australia the Parrot under notice (*Nestor Productus*) has become extinct. Up to 1851 it was known to inhabit a small island in the Pacific, but since that date no trace of it can be discovered. Its range was very limited, the entire race being confined to Philip Island, a rock-girt spot of not more than five miles in circumference, lying to the south-east of Norfolk Island, and distant some three or four miles, though traces have been discovered of it in New Zealand and Norfolk Island. But so wedded was this bird to its tiny home, that there is no known instance of any member having been sufficiently fired with adventure to cross the intervening strip of water. It passed its time among the rocks, or upon the loftiest trees of the island, feeding upon the honey contained in the blossoms of the white *Hibiscus*.

In its mode of locomotion, the *Nestor Productus* departed entirely from the custom of its family, and the awkward waddling gait was exchanged for a leaping one, for it passed over the ground in a succession of leaps exactly like the *Corvidæ*.

Its disposition was so gentle and trusting that it was easily caught alive with a noose, and readily tamed in captivity, when it became a most cheerful, contended and amusing pet, and evinced a great partiality for such artificial foods as lettuce and other soft vegetables, cream and butter, and the juice of fruit. The natural tone of its voice was hoarse and disagreeable, resembling something between the barking of a dog and the quacking of a duck.

During the period of incubation four eggs were laid in the hollow of a tree.

The sexes scarcely differed from each other in colour. In the young, however, the rich red and yellow markings of the breast of the adult bird was in great part lacking, its place being supplied by olive green. The forehead of the adult, the upper part of back and wings, vandyke brown outlined with black; cheeks, flame red; ear coverts, yellow; throat and upper part of breast, burnt umber; lower part of breast, pale yellow; abdomen and lower part of back, deep red; tail, black; under wing feathers, yellow, deepening into flame red; secondaries, black; tertiaries, pale red spotted with brown; irides, yellow; bill and feet, dark grey.

Habitats: New Zealand, Norfolk Island, Philip Island.



NESTOR PRODUCTUS
Philip Island Parrot

GENUS APROSMICTUS. (*Gould*).

OF this only one species is known to inhabit Australia; others are found in New Guinea and the neighbouring islands. Their distinguishing feature in opposition to the *Platycerci* is the possession of a well-developed *os furcatorium*, by the presence of which the chest is much developed in depth, and the powers of flight correspondingly extended. The habits of the *Aprosmictus* are chiefly arboral; their disposition shy and timid, which is often construed into moroseness.

PLATE XXV.

APROSMICTUS SCAPULATUS.

KING LORY. GENUS: APROSMICTUS.

POPULARLY known as the King Parrot, the *Aprosmictus scapulatus* is one of the largest and handsomest, not only of the Lories, but of the whole Parrot family (exclusive of the Cockatoos) indigenous to Australia.

It is generally distributed over the eastern side of the Continent from Wide Bay (Queensland) to Gippsland in Victoria, though individual families are very local in their habitations, and appear to be almost exclusively restricted to the brushes, particularly those low-lying ones, which suit the *casuarinæ* by the humidity of their locality.

The mode of volition adopted by the King Lory approximates so much more nearly to the *Ptistes* than to the *Platycerci* that the former have been generally incorporated with the *Aprosmictus* by ornithologists until within a recent date. It moves gravely, almost ponderously, in a manner that betrays its lethargic disposition. It is entirely wanting in that sprightly vivacity so characteristic of the *Psittacidæ*.

Though capable of being tamed, the process is a slow one, and it never becomes very confiding or apt at imitation; however, its great personal beauty is sufficient recompense to its captor for the lack of more attractive qualities, while its tenacity of life seems incapable of succumbing to anything but extreme old age.

The food of these birds is much the same as other nearly allied species—seeds, berries, and fruits of native plants. They evince great partiality for Indian corn, and will leave their shady homes to attack the cornfields in large flocks, committing in a short time depredations that are most harrowing to the farmer's heart. In Gippsland, where the potato is extensively grown, they have cultivated such a liking for these tubers that they are locally known as "Spud Parrots," and are most destructive to the well-being of the potato crops.

The sexes differ entirely in colour; all the resplendent glory is left to the male, while the female is clad in entire green, excepting the tail coverts, which are dull blue; the throat and chest are tinged with red, and the abdomen and under tail coverts scarlet. The *Albino* variety of the *Aprosmictus scapularis* is of a sickly yellowish-green colour throughout the entire plumage, having the lower part of the breast and abdomen blotched with red. On more occasions than one this Parrot has been found to undergo a most interesting change of plumage during a protracted captivity; the gorgeous red head and breast become a perfect orange, deepening in hue as time passes on.

Head, beak, neck, breast, and abdomen, brilliant military scarlet—in some adult males there is a slight tinge of blue showing at the bottom of the scarlet on the back of the neck; back, rich dark green; wings, dark green, tipped with black; on the scapularies there is a faint green marking known as "the butterfly"; tail

coverts, indigo blue; under tail coverts, red; tail, dark green; irides, black; feet, dark grey. The young resemble their mothers till the second year, when the males begin to develop the adult plumage. From the fact that they arrive at maturity so slowly, it follows they live to a great age; though heat is far more inimical to their general health than cold, they belong to temperate and tropical climates.

Habitats: Port Denison, Wide Bay District (Queensland), Richmond and Clarence River Districts (New South Wales), Victoria.

GENUS PTISTES.—WINNOWNERS.

THESE Parrots differ sufficiently in form and colouring from the *Aspromictus* to warrant their being classed as a distinct genus. They have, in proportion to their size, largely-developed wings, which produce a very laboured flight, quite dissimilar from the general skimming motion of the *Psittacidæ*, and it is hence that they derive the generic name of *Ptistes* or Winnowers. Up to the present only three species are known, two of which are Australian; the third is the *Ptistes vulneratus*, and comes from Timor. In the voyage of the "Astrolabe" this last species figured as the *Psittacus erythropterus*.

PTISTES ERYTHROPTERUS.

RED-WINGED LORY. GENUS: PTISTES.

AMONG our many gorgeously beautiful Parrots, the Red-Winged Lory is one of the most splendid varieties. In the simplicity of its red and green livery there are combined such resplendent tints as both dazzle and refresh the eye by their contrasting harmonies. There is a fine diapason of colours, from the vivid gas-green of the head and neck, through the very dark warm grey of the back, to the patch of scarlet in the wings, against which it is sharply silhouetted. Appreciably smaller than the well-known King Parrot, it is far more beautiful both in the higher accentuation of colour and in contour; and words would utterly fail in conveying an idea of the effect of its brilliant plumage when thrown into strong contrast against the soft silver-green foliage of the wattles, especially when the flock contains a larger proportion of adult males, whose scarlet shoulders, set in a frame-work of vivid green, go flashing to and fro in the sunlight.

Distributed throughout Queensland, the *Ptistes erythropterus* is not numerous near the sea-board, preferring the rolling myall plains of the interior, where the *acacia pendula* stretches in extensive belts, usually over marshy country. Here it may be seen in companies of from six to eight, or in flocks of far greater numbers, seeking out and devouring a scaly bug-like insect which infests the acacias, feasting upon the berry or drupe of a species of *Loranthus* (a parasite of the mistletoe family), or the pollen of flowers. Caterpillars, too, may be included in its diet, as they have been found in the crops of the *Platycerci*.

Different authorities speak so differently of the natural disposition of the Red-Winged Parrakeet that it is hard to know whether it is being cruelly maligned or over-praised. According to some, it has a morose and indocile disposition, which makes it wary of the approach of strangers; others say it has a gentle, quiet disposition, though they admit that it is quite capable of fighting fiercely at times with its mate. So it is quite evident that such conclusions should not be drawn from knowledge of stray individuals; they probably have as much variety of temper as any other class of beings.

The powers of flight are peculiarly adapted to its mode of life among far-reaching plains, where there are wide expanses of country to be traversed with little or no means of alighting to rest; for it has the power of sustentation during long extended flights at a great height above the earth's surface, as it passes from belt to belt of scrub. In flying, it moves after a manner totally unlike any other member of this family, approaching more to the heavy flapping of the Peewit, except that it is slower and more laborious, like that of the *Terus*. As it flies it utters a loud screeching cry.

According to Swainson, this bird is classed with the Lories, because he was under the impression that the honey and pollen of the *eucalypti* were as indispensable to it as to the true Lory; but this classification is considered erroneous by later ornithologists, who find its natural food consists almost entirely of seeds, berries, and insects belonging to the sheath-winged beetle kind (*coleoptera*).

There are three recognised varieties of *Ptistes erythropterus*, distinguished rather through the localities which they inhabit than by any distinctive features. That one known as the *Ptistes erythropterus* or Crimson-winged King Parrot of Queensland is the handsomest and finest of the trio. The head, neck, chest, and breast are a vivid gas-green; the back, deep myrtle-green, ending abruptly in metallic-blue at the junction of the wings, shading again into green on the upper tail coverts; the shoulders, brilliant military scarlet, with faint hue of green on the outer edges; the secondaries and primaries, dark green, tipped with black; the tail, brilliant green above and black beneath; the irides, red; the bill, horn colour at the tip and red at the base. The *Ptistes erythropterus* from Port Denison is slightly smaller, and the green of a lighter shade, while the irides are yellow. The *Ptistes erythropterus* from Barnett River is clothed in shades of dull green, with a smaller patch of red on the wing; the head smaller and the tail longer than in the other two varieties.

For purposes of nidification the Red-winged Lory chooses some tall *eucalyptus* growing along the bank of a river, and deposits four or five white eggs in a hole; the period of incubation lasts from eighteen to twenty-one days, as in all other members of this branch of the Parrot family. The eggs measure one inch one line and a-half long by ten lines and a-half broad.

The sexes differ in the colour of their plumage when they arrive at maturity, the females remaining almost entirely green. The young males closely resemble them for the first two years, only arriving at their full plumage in the third year.

Habitats: Cape York, Rockingham Bay, Port Denison, Wide Bay District, Burnett District (Queensland). Size of bird, about twelve inches.



G. J. BRODOWSKI FECIT

a APROSMICTUS (*Ptistes*) ERYTHROPTERUS (*Gemel*)
Red Winged Lory.

b APROSMICTUS SCAPULATUS (*Bachst*)
King Lory

PLATE XXVI.

APROSMICTUS (*Ptistes*) COCCINEOPTERUS.

CRIMSON-WINGED LORY. GENUS : PTISTES.

BETWEEN this species and the last so little difference is perceptible that it remained an open question for some time whether it should be elevated into a distinct species or not, but a closer acquaintance has shown that the variety is a smaller one in all admeasurements excepting the bill, which is rather larger, and the adult males are more richly coloured in both tones of green and red. The shoulder marking takes a crimson hue, and is not so extensive as in *Ptistes erythropterus*. The female is so similar to the same sex of *Ptistes erythropterus* and the extra Australian species, *Ptistes Venustæ*, that it is a matter of some difficulty to distinguish between them.

Among this last species no red-shouldered male has yet been seen ; and if this most distinctive badge never occurs, the sexes are alike.

This crimson-winged Lory approaches so closely to the *Ptistes erythropterus* of Port Denison that there is little perceptible difference except in the plumage of the lower part of the body, which is of a yellower green ; the tail more vividly coloured ; the amount of red scarcely so much.

Habitats : Port Darwin, Port Essington, Gulf of Carpentaria, Cape York (Queensland).

GENUS PLATYCERCUS.

THIS is a genus of highly ornamental appearance, both in form and colouring, while the development of the long, ample fan-shaped tails which are displayed to the fullest advantage during flight, is in itself a distinctive feature. Widely distributed throughout Australia and Tasmania, the climatic effect has been to produce a large variety more or less distinct, amounting in all to fourteen species. The *os furcatorium* is entirely wanting in this family, the absence of which seems to be a hindrance to sustained flight, and it follows that these birds seldom use their wings except as a means of transport to the nearest trees from the spot where is found an abundant supply of grass seed.

PLATYCERCUS CYANOGENYS.

BLUE-CHEEKED PARRAKEET. GENUS : PLATYCERCUS.

ONE of the greatest difficulties with which ornithologists have to cope in Australia is that of being unable to obtain information concerning birds native to little-known parts of the Continent, where settlements are many hundred miles apart, and the country is only being gradually opened up by squatting syndicates, whose object is naturally not scientific so much as money-making. As a consequence, many birds that may prove as interesting as the Nestors of New Zealand can only be noticed in a bald, general term of existence. This species under notice being one of which there is still everything to learn. The *Platycercus cyanogenys* of Gould corresponds with the *Platycercus amathusiæ* of Ramsay, just as *Platycercus zonarius* corresponds with *Platycercus baueri*.

Closely allied to *Platycercus palliceps*, the yellow and purple hues of the one are exchanged for a green and blue plumage in the other, and the disposition of the tail is more fan-shaped in repose, and therefore handsomer in the *Platycercus cyanogenys*, while the white cheeks of the *Palliceps* are replaced by bright blue, and the bill is more closely set into the head.

This is essentially a tropical bird, as it is only found within the northern territory of Queensland as far south as Rockingham Bay; therefore, there is, happily, no fear of its extermination from the attention of cockney sportsmen.

The general appearance conveys the impression of a small immature *Paliceps*. The forehead is pale yellow, spotted with red; cheeks, yellowy-white; throat, bright blue; under surfaces, pale yellow, each feather faintly tipped with black; yellow of abdomen tinged with green or lazuline-blue; back and shoulders, black, margined with pale yellow; primaries, brown at tip, changing to blue up to shoulders; wing coverts, black, tipped with metallic-blue, deepening to violet; two central tail feathers, metallic-green, tipped with brown; other feathers, violet; under surfaces, pale blue, tipped with white; vent, red; tail coverts, greeny-yellow; bill, dark at base, horny at tip; feet, grey.

Habitats: Port Darwin, Port Essington, Gulf of Carpentaria, Cape York, Rockingham Bay (Queensland).

PLATYCERCUS BARNARDI.

BARNARD'S PARRAKEET. GENUS: PLATYCERCUS.

IN dealing with the *Psittocidae*, it is a matter of no little difficulty to find words adequate and varied enough to describe the many shades and combinations of the gorgeous tropical plumage with which they are clothed. No word-painting could possibly convey a full conception of the fine distinctions of colour in different birds that are closely allied, and even the plate is a watery reflection of the brilliant original that glances like a rainbow flash among the sombre foliage of an Australian forest.

Barnard's Parrakeet is noticeable for the peculiar harmony of its predominant colours—yellow, green, and blue—as well as for the orange-red scimitar-like band that divides the breast of many individuals, though its place is not unfrequently taken by a round patch of crimson on a yellowish ground. This yellow band reappears as a collar round the neck, and as two other Australian Parrots are similarly marked (Bauer's and *Semi-torquatus*), the three varieties are frequently confused together by those who do not know the distinctions.

This particularly handsome bird is only to be found inland, disporting itself in happy freedom along the borders of the great inland river system, for it has never been seen further east than the Liverpool Plains, from thence westward, towards the Darling and the rivers that have Lake Alexandria for their common estuary, it is frequently met with. In the mallee country it is locally known as the Scrub Parrot.

It is usually to be met with in small flocks of from five to ten, feeding among the tall grasses or perched on high trees, particularly among gum trees, and lives upon both tree seeds and grass seeds. It has a gentle tractable disposition, which takes most kindly to captivity.

The first pair that were introduced into England were taken there by Gould, who presented them to the Earl of Derby for the aviary at Knowsley.

In its habits of nidification it follows the same customs as its near congeners, and lays eggs of a roundish oval shape, and white in colour, which measure one inch two lines long by ten lines and three-quarters broad.

This is one of the finest of the *Platycerci*, and measures thirteen inches in length. There is scarcely any perceptible difference in the sexes; but the males are always the larger and handsomer birds. In the female, too, the top of the head is darker, and the breast marking is either very faint or entirely absent. The young birds have brown heads, slightly shot with yellow, followed by a band of bluish-brown; the yellow collar takes a greenish tinge, and the breast marking is always yellowish instead of crimson, as seen in older birds.

The fully matured Parrakeet has a forehead of deep red, succeeded by a light green crown—a colour that appears again in the cheeks, chest, and abdomen, central parts of wings, and on the rump; back of head, brown, followed by a band of yellow; back, bluish-grey; breast, bounded by a deep scimitar-like band; shoulders, tertiaries, secondaries, and primaries, shades of blue at base, ending in brown at tip; tail coverts, pale green; central tail feathers, metallic-green, passing into blue at tips; lateral feathers, deep blue at base, fading into bluish-white at tips; underneath the blue becomes brown towards centre and tips; bill, horn colour; irides, black; feet, brown; size, thirteen inches.

Habitats : New South Wales, Interior, Victoria, South Australia.



G. J. H. PROTHORP, F.C.D.

a. PLATYCERCUS CYANOGENYS
Blue-Cheeked Parakeet

b. PLATYCERCUS BARNARDI.
Barnard's Parakeet

c. APROSMICTUS COCCINEOPTERUS.
Crimson-Winged Lory.

PLATE XXVII.

PLATYCERCUS PENNANTII.

PENNANT'S PARRAKEET. GENUS *PLATYCERCUS*.

IT is almost impossible to find a bird more regally clad than this magnificently plumaged one, and when seen in its vivid living beauty, sharply silhouetted against the sombre green foliage of some shady spot, or glinting in the shaft of a stray sunbeam, it creates a sensation of satisfied pleasure not readily forgotten. In its crimson vest we see the Tyrean purple that was of old restricted to kingly usage; and in the rich purple blue of the throat and wings the royal blue of the present day.

The distribution of the *Platycercus pennantii*, familiarly known as the Red Lory, Blue Cheeked Lory, or Pennant's Parrakeet, is very general over New South Wales, Victoria, and South Australia, but it is not numerous anywhere. It is both arboreal and terrestrial, and is usually found feeding in small flocks on berries, grass seeds, caterpillars, or insects of the coleopterous order.

In common with other members of the genus, it runs very rapidly over the ground, and has a short swift flight, when its long fan-shaped tail of pale blue shows to much advantage.

Being of a gentle trusting disposition, it is easily tamed, and is, on that account, one of the most popular birds sent from Australia to England, either as a pet or as an ornament to an aviary. During the period of youth it is the custom for the birds to assemble together in large flocks, and make visits of depredation to orchards and cultivated grounds, where they, in turn, afford very good sport for the guns of irate owners, besides being a dainty adjunct to the table at that stage.

These birds are gregarious during winter and autumn, but separate into pairs during the breeding season, which extends from September to January. During this period two or three broods of from four to six young ones, are reared; they all remain with the parents till the following spring, when they pair off to their own homes. In New South Wales these birds choose by preference the cedar brushes of Liverpool Range for purpose of nidification, or the coast side of the Australian Alps, where they find a hollow in a gum tree and deposit their eggs. In Victoria the peppermint and stringy-bark trees are preferred for nest building. The eggs are white, and measure about one inch two lines long by eleven lines and a-half broad.

The sexes are alike when full grown; but during the embryonic age that precedes it there is much variation, enough, indeed, to have caused considerable confusion in the differentiation of this Parrot. During the first autumn the young birds are almost entirely green, when they are known as Green Lories; to this succeeds a dress of mingled dull red, blue, and green, which is constantly changing in hue and disposition, till it is merged into the final coat of crimson and blue.

The mature bird has head and under-surfaces of rich crimson; cheeks and ear coverts, bright blue; shoulders and small wing coverts are the same colour; the primaries, black, edged outwardly with bluish grey; back of the neck, secondaries, large wing coverts, black, broadly edged with scarlet; central tail feathers, dark green; lateral tail feathers, deep greyish blue, with outer webs of bluish-white; tail coverts, crimson; under tail feathers, pale blue; irides, hazel brown, surrounded by a narrow bare line of grey, lightly dotted with black spots; bill, bone colour at tip, deepening to horn at base; feet and legs, dark slate grey. The Albino variety takes on a shabby yellowy green, flecked about the head, tail, and neck with red.

Mr. E. L. Layard has procured specimens of *Platycercus pennantii* at Norfolk Island, which are identical, in every particular, with the continental species, both in the plumage of the adult and the immature bird, though they are smaller in size. They are, therefore, recognised as belonging to the same genus, and are

distinguished by the name *Platycercus pennantii*, var. *Nobbi*, in honour of the Rev. G. H. Nobbs, the devoted friend and guide of the Norfolk Islanders.

Habitats: Richmond and Clarence River districts, New South Wales, Interior, Victoria, South Australia, Norfolk Island.

PLATYCERCUS ADELAIDENSIS.

ADELAIDE PARRAKEET. GENUS: PLATYCERCUS.

WE are indebted to the painstaking care of Gould for the fact of this Parrot being established as a separate species. Upon his first acquaintance with it, he was perplexed by its extreme similarity to the *Pennantii* during many conditions of its growth from youth to maturity; and it was only after he had killed members of the species in all stages of development, from nestling to adult, that he was enabled finally to decide upon its claim to a distinct class. He found that the adult, though it approximates so closely to the *Pennantii* in its plumage, is just a little less gorgeously crimson, a little less royally blue, while the dull yellow, so marked a distinction in the developing stages, remains slightly perceptible only in the flanks and at the back of the neck.

The home *par excellence* of this *Platycercus* is South Australia, though its limits extend into other colonies; and in the Forties, during Gould's first visit there, it was so common in the streets of Adelaide itself that he decided no better name could be bestowed upon it than that of the young city. However, its great beauty and edibility soon combined to drive it from this haunt back among the hills. In the interior of South Australia adults are found to associate together in companies of from six to twenty, but nearer the coast, between Holdfast Bay and Port Adelaide, the young ones assemble in flocks of hundreds, generally on the ground, busily employed picking up grass and seeds, and far too intent upon their occupation to betray much alarm at the approach of strangers. When disturbed they rise together and seek refuge in the nearest tree, uttering a shrill piping whistle as they rise.

The Adelaide Parrakeet is smaller in all its dimensions than the *Pennantii*. Its habitat extends through South Australia to Victoria and the Interior.

The young bird for the first season is entirely green, which plumage is succeeded by pale orange-red on the head, rump, and upper surfaces, the scapularies and back feathers being margined with the same for a time, but that disappears to give place to dull yellow on the flanks and olive-yellow on the upper surfaces. In full maturity the scapularies and back feathers are dyed with yellowish-buff and violet. The total length of the bird is thirteen inches and a-half.

Head, back of neck, and breast, red; cheeks and chin, pale bright blue; back, red, flecked with black; shoulders, black, intermingled with yellowish-buff and violet; primaries, secondaries, and tertiaries, pale blue, growing darker towards the tips; tail, dark purple-blue on the upper side and pale blue beneath; irides, black; bill and feet, horn colour.

Habitats: Interior, Victoria, and South Australia.



G. J. BROINOWSKI, FECIT

a PLATYCERCUS PENNATII (Lath.)
Pennants Parakeet.

b PLATYCERCUS ADELAIDENSIS (Gould)
Adelaide Parakeet.

MOORE, W. Y.
HARVARD UNIVERSITY
CAMBRIDGE, MA USA

PLATE XXVIII.

PLATYCERCUS PALLICEPS.

PALE-HEADED PARRAKEET, or MEALY ROSELLA. GENUS: PLATYCERCUS.

THIS species is restricted in its habitations to the eastern portions of Australia, and is particularly numerous in that part of Queensland formerly known as Moreton Bay. Round Sydney it is recognised as the Moreton Bay Rosehill (or Rosella) Parrot, from its near relationship to the *Platycercus eximius*.

The specific name, *Palliceps*, was bestowed upon it in consequence of the light yellow plumage of the head—always faint, and sometimes entirely absent; but the cause in this case is generally attributed to the natural fading of the feathers before moulting, as freshly-plumaged birds have a delicate canary-yellow tint all over the head.

The very name, Mealy Rosella, expresses a volume in itself, and gives an impression of the generally sickly appearance of the bird, which is fully carried out in its plumage; and as there is always a certain correspondence between the outward form and the inward spirit of individuals, one is not surprised to learn it is, in all respects, a washed-out reproduction of its near congener, the *Platycercus eximius*. It is neither sprightly nor hardy; dull and uninteresting by itself, it is quarrelsome among its fellows, and tyrannical when placed in an aviary with smaller birds.

The food of the Mealy Rosella is almost identical with that of the Rosella Parrakeet, but it requires more insect food. In the agricultural parts of the country the cereal crops of the farmers offer an irresistible temptation, especially maize, upon which it preys, fearless alike of gun or scarecrow.

Before nidification a hollow is sought in some gum tree, by preference an apple gum tree (*eucalyptus stuartiana*), whose delicate green drooping foliage and gnarled limbs afford both shelter and beauty to the low-lying flats, where it flourishes best. Here two oval white eggs are laid, in size six inches three lines long by ten lines and three-quarters broad.

The Queensland *Palliceps* is larger and finer than that from New South Wales, and measures twelve inches and a-half in length.

The only perceptible difference in the sexes is a slight superiority of the male in size.

The plumage of the head is pale canary-yellow; cheeks, white; throat, pale stone colour; breast, pale blue, faintly outlined with grey lines; under tail covert, scarlet; wings, shades of violet and blue; back, dark grey, mottled with yellow; tail, metallic-blue in centre, shading off into violet; irides, brown; feet, grey.

Habitats: Rockingham Bay, Port Denison, New South Wales, interior.

PLATYCERCUS ICTEROTIS.

YELLOW-CHEEKED PARRAKEET. GENUS PLATYCERCUS.

IT would seem that the *Platycerci* are unlike other members of the *Psittaci* in that individual species are usually restricted in their habitat to a peculiar locale, even though the genus is widely distributed. The *Platycercus icterotis* is a notable example of this distinguishing trait, for it is not yet positively known to extend beyond Western Australia. There, however, it makes up for its restricted position by being one of the commonest birds of the country, and may be seen at any time except during the breeding season, familiarly frequenting the settlements.

Its natural food is the seeds of various grasses, but it unhesitatingly attacks ripe fruit if left unprotected.

The mode of flight is never sustained, consisting merely of a series of short, rapid, undulating sweeps. The note is a weak, piping kind of whistle, which is sometimes lengthened into the character of a song.

The eggs are white, and six or seven in number, deposited in hollows without any nest; and the same rules as apply to most of the rest of its order hold good with regard to the gradual change and development of plumage, from the olive green of immaturity, to the brilliant parti-coloured livery of scarlet, yellow, blue, and green of perfect maturity.

In size it is a small bird, with head and breast deep red; cheeks, yellow; back, black, each feather outlined with green; shoulders and primaries, metallic green, black and deep blue; secondaries and tertiaries, deep blue, ending in black; tail, metallic green, tipped on outer edges with blue above, and entirely blue beneath; irides, black; bill and feet, horn colour.

Immature bird, dull bronze green, breast and abdomen flecked with red; wings, blue, edged with black on outer web of secondaries and tertiaries.

Habitats: Western Australia, South Australia.



J. J. BRONOWSKI, FECIT.

a PLATYCERCUS PALLICEPS (Vigors)

Pale Headed Parakeet.

b PLATYCERCUS ICTEROTIS (Temm.)

Yellow Cheeked Parakeet

PLATE XXIX.

PLATYCERCUS EXIMIUS.

ROSEHILL or ROSELLA PARRAKEET. GENUS: PLATYCERCUS.

THIS is certainly one of the handsomest of the Australian Parrots, and besides has an interest apart from its appearance, in that it was one of the first natural productions of Australia sent to Europe, where it was obviously regarded as a great curiosity, though now it is one of the most easily obtained foreign birds in England, Belgium, France, and Germany, where it breeds freely whenever care is taken to place it in surroundings sufficiently like the natural ones. Dr. Russ, a great authority upon such subjects, speaks of the Rosella in a sort of panegyric: "Not only," he says, "is this bird distinguished for the rich colouring of its plumage, but by its lively and active habits, and, in the breeding season, by the comical way it has of singing and dancing." It seems to possess all the qualifications that are most suitable to the aviary; it is hardy, caring nothing for severe winters; it is very noisy, everlastingly in motion, and warbling or chattering continuously; it is quite capable of being tamed, but does not possess any great imitative capacity. At the most, the male will only learn to repeat a few words; while the female has even less talent. But she is very quiet, gentle, and docile, seldom shrieking or otherwise proclaiming her whereabouts.

The *Eximius* is so closely allied to several other species in appearance, habits, and general economy, that to the eye of the ordinary observer it may be thought to be commonly distributed over the Continent. As a matter of fact, it is widely distributed from Wide Bay to Tasmania and South Australia, but within that radius individual groups are strictly confined to certain localities; the reason of which is readily comprehended after closely watching its mode of flight.

As has already been stated that the *os furcatorium* is entirely wanting in the whole of the *Platycerci* and their flight is correspondingly fugacious; some species, however, being more capable of sustaining themselves on the wing than others. The *Platycercus eximius* does not belong to this latter class, for it has only a short undulating flight that can seldom be sustained for more than a quarter of a mile, when the bird finds it necessary to perch and rest on some tree near by, always flying a little below the branch and rising again before it settles. Under such natural conditions, it is a foregone conclusion that, should the bird affect a forest divided by a deep, broad river, the other side will not know it. Such is the case in several instances in Tasmania; it has never been seen about D'Entrecasteaux's Channel in the south, or in the neighbourhood of the Tamar in the north of the island. On the north bank of the Derwent it thronged the stretches of gum forest, while across the river, a quarter of a mile away, the bird was never seen.

Neither is it fond of densely-wooded districts, but prefers the more open country, where low grassy hills, interspersed with large trees or belts of acacia and *banksia* promise a plentiful supply of food. It is particularly among the acacias that this lovely delicately-constructed Parrot makes its home, perhaps secretly conscious of the charming contrast between its brilliantly-accented self and the silver grey foliage and golden blossoms among which it lives.

Common enough in some localities, the Rosella is entirely wanting in others not separated by any natural barrier, and, in short, may only be looked for in sandy country, small plains, open hilly spots, and thinly-timbered districts, where grass is plentiful, for its food consists chiefly of grass seeds, varied by other seeds, insects, and caterpillars. During the breeding season there is no doubt that it feeds largely on white ants and *coleoptera*, which it finds in decayed wood. This bird is sufficiently fearless in disposition to trust itself close to the habitations of man, and it may be seen in small companies on all the public roads searching for spilt grain, or intent upon filling its crop at the expense of a newly-sown cornfield or ripening harvest.

In New South Wales the *Eximius* is found abundantly in the district of the Upper Hunter, and was at one time very numerous about Rosehill, Parramatta, hence the origin of its name, Rosella being merely a corruption of Rosehill.

Incubation extends over October, November, December, and January, when numerous families of from seven to ten are reared in the hollow bole of some dead gum tree. The eggs are white, and measure one inch one line and a-half long by eleven lines broad.

The sexes are alike, except that the female is slightly shorter and less brilliant than the male, which is about twelve inches and a-half long. The young birds are fully plumaged from the nest, and can only be distinguished from the adults by their inferior size, less brilliant colouring, and by the hue of the bill and nostrils, which are a delicate gamboge yellow. They grow slowly, and do not assume the perfect adult plumage till quite twelve months old. In Tasmania the Rosella attains a rather larger size than on the mainland, the markings of the upper surface are a greener yellow, and the bird less brilliant on the whole.

The forehead, head, neck, and breast, a fine scarlet, with a white patch on each cheek, nearly meeting under the chin; the bottom part of the breast, yellow, shading off into pale green on the abdomen; under tail coverts, cardinal; back, yellow, with regular black marking; shoulders, a beautiful light blue; secondaries and tertiaries, cobalt blue; primaries, deep blue at base and brown at tips; tail coverts, bright pale green; tail, green above, tipped with blue on outside edges, beneath, metallic-blue; lateral feathers, pale blue, tipped with white; irides, black; feet and bill, horn colour.

Habitats: Wide Bay District (Queensland), Richmond and Clarence River Districts, New South Wales, Victoria, South Australia, Tasmania.

PLATYCERCUS IGNITUS.

FIERY PARRAKEET. GENUS: *PLATYCERCUS.*

WE owe the classification of this Parrot to Gould, whose knowledge in this instance was very limited, as he only saw one specimen, which combined in itself so many anomalies that he was much inclined to believe it was merely a diseased variety of some other species; at the same time it possessed sufficient individual markings to upset that theory.

It is forty years ago since that solitary specimen was forwarded to him from Moreton Bay, and in the intervening time no fresh information has been gained of this rare bird, either as to its habits or economy, which is the more strange as it was captured in a now well-known district.

The *raison d'être* of its being erected into a fresh class lies in the distinctive white markings at the base of the primaries and secondaries and in the under wing coverts. Such markings are found in most of the immature *Platycerei*, but they are thrown off as the bird approaches maturity, and are never at any time so distinct as in the *Ignitus*.

Description of plumage: Crown of the head, ear coverts, rump, breast, and under surface of the body, scarlet; cheeks, white; feathers of the back, black in the centre and margined with intermingled scarlet and yellow; middle of the wing, deep blue; primaries and secondaries, white at the base (forming a very broad and decided band) and brown at the tip; tertiaries, green; four middle tail feathers washed with scarlet, the remainder white at the base, and then blue, gradually fading again into white at the tip; bill, yellowish horn colour; feet, dark brown.

Habitats: Moreton Bay (Queensland), New South Wales, and Interior.



G. J. BRODOWSKI, FECIT.

a PLATYGERCUS LINEATUS (Lacép.)
Fiery Parakeet

PLATYGERCUS EXIMUS
Red-headed Parakeet

PLATE XXX.

PLATYCERCUS FLAVEOLUS.

YELLOW-RUMPED PARRAKEET. GENUS : PLATYCERCUS.

IT may be said that Parrakeets, as a whole, are gorgeous, from the diversity of their colouring, rather than beautiful from the harmonious blending of their plumage; but there are some exceptions, and the *Platycercus flaveolus*, of which we are now speaking, is one of them. It may be described as a harmony in blue and canary-yellow, and is an exceedingly lovely bird. But one is even more struck with the beauty and colouring of its fan-shaped tail, which is a most important integral of the entire bird.

We have yet to learn much more of those tricks of manner and habits, adapting it to the position in the family to which it belongs, that make bird-life so interesting, for not a great deal is yet known of the *Platycercus flaveolus*. It is abundant on the banks of the Lachlan and Darling Rivers, whence Captain Sturt procured the first specimens that were sent to England.

The sexes are alike, except that the colours of the female are far less brilliant than her mate, and they are about the same size as the Rosella—perhaps a little larger.

Both arboreal and terrestrial, as grass seed feeders they seek most of their food upon the ground, but perch among the gum trees, and probably make a dessert of the honey in the cups of eucalyptus blossoms. They are hardy, lively, and beautiful—three qualities that recommend them as valuable acquisitions to an aviary, and, further, can be rendered very tame if they are captured young; but their imitative powers are not great—they rarely learn more than a few short words or sentences.

In its natural state, the *Platycercus flaveolus* breeds in the hollow of limbs; but it is difficult to find their nests, as they are chosen in most inaccessible spots. Incubation extends from September to February, during which time two breeds of four or five young ones are reared, which remain with the parents till the following spring, when they separate, and each pair set up house-keeping on their own account.

From the fact that the young ones assume the garb of the adult birds at a very early age, we infer that there is very little variation of plumage.

Forehead, crimson; cheeks, sky-blue; head, neck, breast, abdomen, and upper tail coverts, canary-yellow; back and shoulders, black, margined with yellow; spurious wing and outer feathers of tertiaries, violet-blue; tertiaries, secondaries, and base of primaries, pale blue, deepening as it descends; tips of primaries, brown; central tail feathers, olive-green at base, passing into deep blue towards tip; remaining feathers, deep blue at base, passing into pale blue towards the tip; inner webs, brown, tipped with white; irides, black; bill, horn colour; feet, dark brown; total length, thirteen inches and a quarter.

Habitats: New South Wales, Interior, and Victoria.

PLATYCERCUS FLAVIVENTRIS.

YELLOW-BELLIED PARRAKEET. GENUS : PLATYCERCUS.

THIS decidedly handsome bird is found dispersed over Tasmania, the islands of Bass' Straits, and South Australia; and is sometimes found associated with the *Platycercus eximius*, though it does not follow the same rule of inhabiting a circumscribed locality. This is a bird of strong family affection, as is proved by the circumstance that it is found in small companies, which are usually the brood of a single pair.

The food upon which the *Platycercus flaviventris* chiefly subsists is grass seed, but it has no objection to gum blossoms, insects and their larvæ, or cereals. For the last it has a constantly-increasing partiality, so much so that this charming Parrakeet has ceased to be beautiful in the agriculturalist's eyes, who regards it as a very pest during the season of sowing and harvest. In consequence of these omnivorous tastes, it is to be found equally on open cleared lands, or the hills and gullies of retired forests, and passes rapidly from one to the other, or to distant districts, by means of its strong powers of flight performed in wide undulating sweeps, if food should grow scarce.

From the nature of their food, most of the *Psittacidæ* are good and even delicate eating ; though the excellence of the flesh varies with the season of the year, just as in other birds, and this particular species is generally admitted to carry off the palm before all others for the delicacy, tenderness, and good flavour of its flesh ; so that in districts where it is plentiful, it is a staple article of food to the settlers.

Nidification takes place in September, and the eggs are deposited in a hollow gum tree ; the number of eggs ranges from six to eight, one inch two lines long by eleven lines wide ; and incubation is carried on till December. The young when hatched are covered with a fine white down, which makes them look like balls of cotton wool.

During the first year the sexes are alike, being generally of a greenish-olive, with a slight tinge of blue on the cheeks, wings, and outer tail feathers, and a faint red mark on the forehead. In full maturity, the male is larger and more brilliantly coloured than the female. Forehead, crimson ; top of head and back of neck, pale greeny-yellow, each feather slightly tipped with brown ; space under the eye, slightly tinged with crimson ; cheeks, dull blue ; breast and under surfaces, yellow, each feather margined with blue ; scapularies and back, dark olive-green in the high lights, and black in the shadows, tipped with green ; middle of wing, pale blue ; primaries, darker blue at base and ending in brown ; upper tail coverts and two middle tail feathers, green ; the rest dark blue, growing lighter towards the tips ; irides, brown ; bill, flesh-colour ; feet, grey.

Habitats : South Australia, Tasmania.



C. J. BROINOWSKI

a. PLATYCERCUS FLAVEOLUS
Yellow-Rumped Parrakeet.

b. PLATYCERCUS FLAVIVENTRIS
Yellow-Bellied Parrakeet.

PLATE XXXI.

PLATYCERCUS ZONARIUS.

BAUER'S PARRAKEET or PORT LINCOLN LORY. GENUS: PLATYCERCUS.

THIS handsome Parrakeet, also known as *Platycercus baueri*, is nearly allied to the *Platycercus semi-torquatus*, though it differs from it very materially in several particulars. In size it is a good deal smaller, and its plumage shows more brilliant contrasts.

When seen from behind, the birds might easily be supposed to be identical, but the delusion ceases immediately they turn; for the eye is at once caught by a band of splendid yellow, which separates the breast from the vent, which is the distinguishing feature of the *semi-torquatus*.

So far, little is known of the habits and food of Bauer's Parrakeet; and in the absence of trustworthy information, we suppose that it resembles the *Platycercus semi-torquatus* in these respects as in others.

It was first observed at Port Lincoln, and is locally known there as the Port Lincoln Lory; it bears confinement with great equanimity, and is a common pet. The plumage is found to vary at different ages and in different seasons.

The females are smaller and less brilliantly coloured than the males, as is the almost invariable rule among the *Psittacidae*; the head and neck, dead black; cheeks, deep blue; back of neck shows a crescent-shaped marking of bright yellow; throat, chest, shoulders, and back, deep green, passing into a verditer green on the wing-coverts; primaries, black at tips and deep blue at base; tail feathers, deep green, tipped with lazuline-blue above, under surfaces bluish-white; abdomen, deep gamboge yellow; vent and upper tail coverts, grass-green; bill, horn-colour; feet, dark brown; irides, black.

Habitats: Interior, Victoria, and South Australia.

PLATYCERCUS SEMI-TORQUATUS.

YELLOW-COLLARED PARRAKEET. GENUS: PLATYCERCUS.

COMMONLY known as the "Twenty-eight" Parrakeet, from the peculiar notes it utters when in motion, the *Platycercus semi-torquatus* is a bird of restricted habitat, being found only in Western Australia. Within that region it is plentiful enough, and is equally well content searching for food on the trees bearing hard stoned fruit and seeds, or living upon the grass seeds of the ground. It follows, then, that the bird is semi-terrestrial in its habits, though, correctly speaking, it is a ground Parrot, for the *os furcatorium*, so necessary to sustained flight, is entirely lacking, and to balance this want it has the power of running very swiftly. During the short journeys on the wing, its flight is remarkably rapid. These varied qualities prove that this is a very important member of the *Platycerci*, combining as it does such opposite powers of wing and feet.

The breeding season begins in the end of September or early in October, when the pairs seek out a hollow in a gum tree or a mahogany tree (*eucalyptus marginata*), and lay seven to nine eggs on the soft black dust collected on the bottom. They are pure white in colour, and many of them have a pinkish hue before being blown.

This is the largest species of ground Parrakeet yet found in Australia, and is a very handsome bird besides. Its nearest congener is *Platycercus baueri*, which has many points of resemblance in the matter of plumage.

As usual, the sexes do not vary in appearance, beyond a diminution in size and a modification in the colour of the plumage. The forehead is crossed by a narrow band of bright red ; head, neck, and cheeks, blackish-brown ; throat, blue ; back of neck, a crescent marking of gamboge-yellow ; back, shoulders, and rump, deep bright green, passing into pale green on the shoulders ; wings, blackish-brown, passing into deep blue at the base, four central tail feathers of deep grass-green, tipped with lazuline-blue ; lateral feathers, green at base, passing into blue, which fades towards the tip into bluish-white ; chest, green ; under surfaces, light green ; irides, dark brown ; bill, light horn colour, becoming of a lead colour on the upper mandibles ; legs and feet, dark brown.

Habitat : Western Australia.



G. J. BRIDGES

a. PLATYCERCUS ZONARIUS
Port Lincoln Lory

b PLATYCERCUS SEMI-TORQUATUS
Yellow Collared Parrakeet

PLATE XXXII.

PLATYCERCUS PILEATUS.

RED-CAPPED PARRAKEET. GENUS: PLATYCERCUS.

THIS variety of Parrakeet differs in so many essentials from the ordinary *Platycerci* that the question of its right to be placed among the group has raised much doubt, and many ornithologists, in fact the majority of the late ones, have decided against the classification adopted by Gould, and create for it a specific genus, *Purpureicephalus pileatus*, or place it half-way and call it *Platycercus spurius*.

On his part, while pointing out the fact that the form and structure of the bill and the colouring of the plumage are distinctly peculiar, Gould thinks it may yet be found by observation that these characteristics are modifications due to some special requirements, and not original distinctions.

Again, the mode of flight adopted by the *Platycercus pileatus* differs entirely from its supposed congeners, in that their graceful, undulating, sweeping flights are substituted for a swift direct course, while its voice is an often-repeated clucking note.

Incubation takes place between October and December, when clutches of from seven to nine milk-white eggs are laid, measuring one inch one line and a-half long by ten lines and a-half broad. Like the *Semitorquatus*, these birds choose by preference the hollow in a gum or mahogany tree (*Eucalyptus marginata*) for their nests.

For the first year the young birds are almost entirely green, though it is very easy to detect the shades of colour that characterise the adult at almost any age. The females are wanting in the size, grace, and splendour of the fully-matured male, being merely a faded reflection of him.

The *Platycercus pileatus* is a bird of restricted habitation, having been seen only in Western Australia, where, however, it is widely and abundantly dispersed.

Description of plumage: Head and back of neck, cardinal-red; cheeks and throat, yellowish-green; under surfaces, pale violet-blue; vent, yellow, tipped with red, ending in red; back, shoulders, great wing coverts, deep green; rump, bright yellow; edges of shoulders, spurious wing, and base of the outer orbs of primaries, rich dark blue; remainder of primaries and secondaries, black; central tail feathers green, deepening into black; lateral tail feathers, deep blue at base, fading off into white at tip; irides, dark brown; bill, horn colour; legs and feet, dark brown.

Habitat: Western Australia.

PLATYCERCUS BROWNII. (*P. Venustus*).

BROWN'S PARROT, or BEAUTIFUL PARRAKEET. GENUS: PLATYCERCUS.

THIS lovely little bird is the unconscious possessor of two names, both of which are appropriate for different reasons. Of late it has generally been recognised as *Platycercus Brownii*, in compliment to Dr. R. Brown, the scientific botanist, but ornithologists have now to acknowledge with much regret the prior claim of *Venustus*, which is certainly more euphonious; though whether it will carry the day or not, still remains to be seen.

Of distinctly tropical nature, Brown's Parrot is found abundantly on the northern coast of Australia, populating grassy flats and the edges of swamps, where it finds plenty of grass and other seeds upon which it

subsists. Usually these birds consort together in families of from ten to twelve, but occasionally they are met with in pairs.

The flight is only sustained long enough to enable the bird to pass from tree to tree, which passage is accomplished with a rapid zig-zag motion. It has a peculiar cry, being a rapid succession of double notes, sounding somewhat like "trin-se trin-se."

We infer from the few specimens that have been obtained that there are local differences in the plumage of individuals, those from the north coast differing slightly from those captured at Coburg Peninsula further west, not only in the disposition of the bands on the breast, but in the addition of deep red markings on the head and body. It is not at all unlikely that this rich plumage comes as the crown and glory of old age.

The plumage of the immature bird is similar, except that the markings are all dull and indistinct. As they approach maturity each feather of the breast is accentuated by a crescent fringe of black, most strongly marked at the throat, and getting fainter at the base. With advancing age the yellow increases, and almost absorbs the black.

Plumage : The whole of the head to the nape of the neck, a deep dull black ; cheeks, pure white, faintly edged with blue ; breast and upper tail coverts, yellow, tipped with black ; back, black, with broad margin of yellow ; vent, scarlet ; wing coverts, outer webs of secondaries, and base of primaries, rich blue ; inner web of primaries and secondaries, deep black ; centre tail feathers, green at base, passing into blue ; lateral tail feathers, purple-blue at the base of the outer webs, brown at the base of the inner webs, then pale blue, ending in white, with black shafts ; bill, light horn colour, turning to blue at the base ; tarsi, brown.

Habitats : Port Darwin and Port Essington (Northern Territory).



G. J. BRONOWSKI, FECIT

a PLATYCERCUS PILEATUS.
Red Capped Parakeet.

b PLATYCERCUS BROWNII
Beautiful Parakeet.

PLATE XXXIII.

PLATYCERCUS SPLENDIDUS. (*Gould.*)

SPLENDID PARRAKEET. GENUS: PLATYCERCUS.

IN this bird we have what might be mistaken for a handsome variety of the *Platycercus eximius*, the difference in size and plumage being very slight. Nevertheless it is a distinct species, not numerous in its own special locality, and much restricted in its range—two qualities that prove its distinctive character, without taking into consideration the change in the plumage. In the *Platycercus splendidus* we find the centre of the breast only a rich scarlet, the sides being gamboge yellow; the lower part of the abdomen and the upper tail coverts are verditer green instead of grass green, and the feathers of the back are broadly margined with rich gamboge instead of greenish-yellow.

Before arriving at maturity this bird closely resembles the *Platycercus palliceps*, except that the head is a decided yellow instead of being a sickly one, and the breast is yellow instead of blue, with indications of the rich scarlet of maturity that is never found in *Platycercus palliceps*.

Of its habits and qualities nothing is known, and from that fact alone we may infer that it is of a shy, retiring disposition, finding ample sustenance in the seeds and gum blossoms of the more secluded parts of Eastern Australia. The only specimen obtained by Gould was shot by Gilbert in what was then a newly-settled district to the north of the Darling Downs. It is a large beautiful bird, measuring twelve inches long.

Head, sides of the neck, and centre of the breast, scarlet; cheeks, white, faintly tinged with blue; feathers of the back and scapularies, black, broadly margined with gamboge yellow; lower part of the back and upper tail coverts, pale green; on the shoulders a patch of black; wing coverts, pale blue; primaries, black, with the exception of the basal portion of the external web, which is rich deep blue; two central tail feathers dark green at the base, passing into deep blue on the apical half of the external web, and tipped with black; the next on each side is black on the internal web, green at the base of the external web, blue for the remainder of its length, and slightly tipped with white. The remainder of the tail feathers are deep blue at the base of the external and black at the base of the internal web, the remaining portions of both sides being pale delicate blue, passing into white at the tips; sides of the breast and the abdomen, bright gamboge yellow; vent, pale green in some, in others pale bluish green; under tail coverts, scarlet; irides, dark brown; bill, horn colour; feet, mealy brown.

Habitats: Wide Bay District (Queensland), Interior, New South Wales.

PLATYCERCUS MASTERSIANUS. (*Ramsay.*)

MASTERS' ROSELLA. GENUS: PLATYCERCUS.

THIS Parrakeet is an example of the difficulty naturalists labour under in their endeavours to compile a trustworthy and exhaustive work on the natural history of Australia. With their utmost endeavour they can do no more than add a little to what has already been said by Gould; elucidating his surmises in one direction, and correcting them in another, according as fresh knowledge is added to that already gleaned by this most enthusiastic and thorough scientist.

The *Platycercus mastersianus* never came under his notice at all, and during the forty years that have elapsed since his Handbook was published, only two specimens have been preserved for the pen and brush of the ornithologist—an old and a young bird. The first was found by Dr. Ramsay (to whom we are indebted for all that is yet known of it), in the Sydney Museum, and spoken of by him as “one of the few relics of our early explorers that I found left in the Museum.” In compliment to Mr. George Masters, who drew his attention to the bird as a new specimen, he called it *Platycercus mastersianus*, or Masters’ Parrakeet. Evidently no previous naturalist had considered it worthy of classification, or else believed it to be an abnormal specimen of an already recognised type. It is scarcely to be wondered at if this were the case, for the bird is singularly devoid of the gay plumage one naturally associates with parrakeets, and it might easily pass for a faded, ill-used female member of half-a-dozen other species, or a badly-plumaged *Platycercus eximius*, starved and altogether ill-treated. Seated among the grey-green gum leaves, the *Platycercus mastersianus* would hardly be observed—may be that very likeness to the eucalypts among which it lives had hidden it from previous notice. The young bird referred to was obtained recently in the northern interior portion of New South Wales.

Size: Adult, total length, about eleven inches; wing, five inches nine lines and a-half; tail, six inches three lines and a-half; tarsus, six inches nine lines and a-half; bill, eight lines and a-half.

Colouring: The front, top of head, nape and ear coverts, crimson, mottled with yellow on the sides of the head, ear coverts and nape; feathers of the hind neck and back, yellowish at the tips; blackish on concealed portions, those on the neck washed with red, and tinged on the sides with bluish green; rump and upper tail coverts, crimson, the outer series of the latter greenish; scapulars, black, broadly margined with yellow, mingled with red and blue; shoulders, deep blue; smaller coverts, deep blue, centred with black, or black, margined with blue; medium coverts, light blue; outer web of primaries and secondaries, blue; inner web and tips of primaries, black; underside of wing, black, traversed about the middle of the quills with an indistinct, broken white band (in a young specimen this band is complete); under wing coverts, blue; cheeks, blue, palest near mandible; under tail coverts, crimson; chest, bluish green, margined with yellow, many of the feathers centred with a large crimson spot; abdomen and flanks, bluish green, the tips of the lower flank feathers crimson; tail, black below, the apical third of all, except the two centre feathers, blue, and tipped with white more largely on the inner than on the outer feathers; centre tail feathers above, greenish on the inner webs, blue on the outer, the rest blackish at the base, blue on the outer webs, the anterior third of each feather light blue, and tipped with white, the spot increasing in size as the feather is more internal. Bill, bluish at the base, whitish at the tip (probably faded); feet, dark brown; iris, in a young living example, dark hazel.

Associated with *Platycercus mastersianus* by Ramsay is a parrakeet closely resembling it, and called by him *Platycercus mastersii*. Of a very similar size, this latter differs entirely in appearance from its congener both in shape and colouring. The head is dull red, speckled with yellow; throat, pale blue, deepening into bluish purple; breast, speckled red and yellow; abdomen, pale metallic blue; under tail coverts, red; back, dull red, yellow and black; wings, pale bluish purple on the shoulders, deepening into rich bluish purple in the primaries and secondaries; tertiaries, black on the tips and outer edges; the forked uneven tail, pale blue, tipped with white on the under surfaces; black on the upper surfaces. Habitats: Interior, New South Wales.

Habitats of *Platycercus mastersianus*: Interior, New South Wales; Wide Bay District (Queensland)

PLATYCERCUS SPURIUS. (*Kuhl.*)

SPURIOUS PARRAKEET. GENUS: PLATYCERCUS.

TO the close observer of the laws that govern so small a matter in detail as the arrangement of people and things in their relative order of consequence, the first and last names on a list are significant of much, and carry, to a large extent, an unwritten volume merely in their order of procedure.

Of the sixteen recognised *Platycerci*, this last named one is sufficiently allied to the first to claim a relationship to other and more orthodox members of its family, but it evidently possesses, as well, Bohemian proclivities that have earned for it the name of *spurius*. In the important matter of habitation, too, it is an outsider, hailing from that "terra incognita" of naturalists, King George's Sound, though it has been found as far eastward as South Australia. But no authentic information has yet been obtained with regard to its manner of life. Probably the *Platycercus spurius* confines its range within the magnificent forests of Jarrah-wood (*eucalyptus marginata*) that clothe the coast of Western Australia and extend into South Australia. If this should prove to be the case, one might build up a hypothesis to account for its distinctive shape and pose, by suggesting the well-known effect of a special food and surroundings upon a given subject.

In any case the *Platycercus spurius* is a most noble and graceful departure from the strict peculiarities of its race. A fine full-bodied bird, which strikes one at first glance as being different in the more horizontal pose of the body, standing on a pair of slender legs unusually long from the ankle to the toes. The beak, too, partakes of the same character, being long, sharp and pointed rather than closely curved. From this last fact it would not be too much to assume that the bird is both terrestrial and arboreal in its habits, and is equally happy in making a meal from the honey-cups or pecking insects from the ground.

The matured male *Platycercus spurius* is so different in his splendid plumage to the bird of the same size in its period of adolescence that the young one might be taken for a mature specimen of another species did we not find examples of various stages of development in one family. The young males entirely lack the blood-red head, yellowish-green cheeks and blue under surfaces of the mature bird, and are of a shabby green with dirty blue under surfaces. The females are entirely of a bright rich green.

Head, dull red; throat, verditer green; breast, dull indigo blue, merging into pale blue on the abdomen; rump and tail coverts, red flecked with yellow; under tail feathers, pale grey blue; upper tail feathers, blue; upper tail coverts, bright green, merging into yellowish-green on lower part of back; back, deep emerald green; shoulders, green touched with blue; primaries and secondaries, deep blue; tertiaries, deep blue tipped with black, tarsi, brown. The tail is forked after the same fashion as that of *Platycercus mastersii*.

Habitats: West and South-West Australia.



a. PLATYCERCUS SPLENDIDUS
Splendid Parrakeet (Gould)

b. PLATYCERCUS MASTERSIANUS
Master's Rosella. (Ramsay)

c. PLATYCERCUS SPURIUS.
Spurious Rosella (Gould)

G. J. BRODOWSKI. FECIT.

PLATE XXXIV.

PLATYCERCUS AURICEPS.

GOLDEN-CROWNED PARAKEET OF NEW ZEALAND. GENUS: PLATYCERCUS.

THIS is a small edition of *Platycercus Nova Zealandia*, having similar characteristics, except that the crown of the head is, as its name indicates, yellow instead of crimson, and this is its distinguishing mark. Though not restricted to any locality, it is found more plentifully in the northern part of the North Island, and decreases as we approach Cook Straits. In the South Island, however, both species are equally plentiful. The *Auriceps* is less gregarious than its near congener, and is usually seen in pairs. It is even more gentle and tractable, but possesses little imitative faculty; it is capable of strong attachments, and will become so tame and so fond of its owner that it will accompany him out of doors. It is very timid, however, and easily frightened, when it will fly some distance on its powerful wings, but invariably returns when the alarm is over.

It is exceedingly fond of bathing, and drinks very freely; and this love of liquids is perhaps one reason why it has so strong a preference for juicy berries. Of strictly arboreal habits, its favourite food consists of the berries of the tutu bushes (*coriaria ruscifolia*); and it becomes so absorbed in feeding upon them that the natives snare it easily, while so engaged, by means of a flax noose at the end of a long slender stick. So long as these juicy berries last, the *Auriceps* eats nothing else, and the whole of the bird's flesh is stained by the dark purple dye. Later, when the wild dock is seeding, it is happy in feeding upon the seeds of this poisonous weed. At other seasons, it finds ample food in the berries of *coprosma lucida* (native currant), *fuchsia exorticata*, and other forest shrubs. Should this natural food fail, the *Auriceps* will descend in myriads upon the cultivated grounds, and devour soft fruit, grains, pulse, and tender shoots, passing over the land like a devastating army.

The process of incubation is similar to the Red-Fronted, and from five to eight eggs, resembling the others, but smaller, are laid.

The long legs of this bird enable it to hop very freely; and it scratches with its feet in the sand and dust like the *Gallinaceæ*, which seems to be a peculiarity of the New Zealand Parrots.

There is so little difference between the male and female that they can only be distinguished by comparison, when the latter will be found to be a trifle smaller, and to have a rather paler frontlet. Total length of male, ten inches.

The upper surfaces, a deep rich green; the under surfaces are lighter, with a dash of yellow in the green; primaries and secondaries, blue; inner web of the tertiaries, brown; forehead, vivid red; crown of head, bright yellow; under tail feathers, grey; feet, dark grey; irides, deep red; upper mandible, blue, with a black tip; under mandible, horn colour.

Habitats: North and South Islands, New Zealand.

GENUS POLYTELIS (*Nagler.*)

THIS is a small genus comprising, so far as at present known, only three species, two of which are common to the central and southern parts of Australia, the third is a tropical bird of limited range. The family seems to occupy a position midway between the *Palæorni* of India and the *Platycerci* of Australia, and forms an isolated group among the *Psittacidae*.

The sexes vary so much that Vigors described them as distinct species. The male is by far the handsomer, but they both have the distinguishing mark of long and very fine tails.

POLYTELIS BARRABANDI.

BARRABAND'S PARRAKEET OR GREEN LEEK. GENUS: POLYTELIS.

THE male of this bird is perhaps one of the most beautiful of the Parrot tribe, both from its colouring and form, being singularly graceful and well proportioned. The length of its tail is a striking feature, for out of the fifteen inches of total length, eight of them belong to the slender, pointed tail.

The correct name, Barraband, was bestowed on it in compliment to the French bird painter, but it is most commonly known as the Green Leek. It is very numerous in New South Wales and Victoria, where it is a favourite cage bird, from its affectionate and demonstrative disposition; but it is a poor talker, nor does it bear confinement well, soon succumbing to the effects of unsuitable food and restricted space.

The Green Leek, though by no means widely distributed, is migratory within that limit, speeding from colony to colony or district to district as the migratory instinct seizes it; and this very habit may be a prime cause for its being a bad cage bird, for, no doubt, change of scene, air, and food are a necessity of its life. Authorities are divided as to the food it most affects; probably it lives partially upon the blossom of gum and wattle trees, and partially upon insects, showing its connection with the *Platycerci* in this particular. In differentiating this whole genus we are not much further advanced than Selby and Jardine who wrote many years ago.

"In this handsome bird we have one of those interesting forms which so beautifully connect groups otherwise distant and far removed: for though the character and shape of the tail, the well-defined ring or neck-collar, the proportions of the wings, etc., evidently place it in this genus (*Palyæornis*), its elevated tarsi and feet (*sic.*) show an approach to the Broad-tailed division (*Platycircinæ*), which stands at the further extremity of the *Psittacean* family. It is also a native of New Holland, in which interesting country so many species of *Platycircus* have been discovered, the rest of the King Parrakeets, being the greater part of them natives of Continental India, and its neighbouring islands . . . It (*the barrabandi*) was first figured by Mr. Swainson in his elegant and valuable 'Illustrations,' under the name of the *Psittiacus barrabandi*, from a skin in the possession of Mr. Leadbeater . . . Judging from the proportion of its legs and feet, we are led to suppose that it is more terrestrial in its habits than its congeners, or that, in addition to its scansorial or grasping powers, it possesses superior activity and moves with greater facility upon the ground."

Nothing is known of its nidification. The egg is white, but less round than Parakeets' generally are, and more the shape of the Cockatoos'. Length, one inch two lines and a-quarter, breadth, eleven lines.

The female is far less beautiful than the male; the green is duller, and the orange and red markings about the head and throat are wanting; instead there is a little plum colour on the throat and upper part of breast, and a little orange-red about the thighs. The young males have a similar plumage for the first year.

The adult male has a general plumage of rich pure green; the under surfaces faintly tinged with yellow; forehead, cheeks, throat orange-yellow with slight touches of red; a crescent marking of vivid red

beneath the yellow throat; primaries, secondaries, spurious wing and tail, dark blue tinged with green; under wing surfaces, black; spines of tail feathers, black; beak, pale red with white tip; irides, pale yellow; tarsi, dull black.

Habitats: New South Wales, Interior, Victoria, and South Australia.

POLYTELIS MELANURA.

BLACK-TAILED PARRAKEET. GENUS: POLYTELIS.

LIKE Barraband's Parrakeet, there is yet much to learn of the Black-tailed (this name, by the way, is a complete misnomer, as most of the birds have tails that are more of a dark bluish green colour), but in all essentials we may conclude, from the similarity of appearance and locality, that what is true of the one is true of the other. A. T. Forbes Leith writes of it briefly: "This very fine Parrakeet visits the mallee country, North-West Victoria, crossing from South Australia at various seasons, in small numbers." When captured young these birds become good talkers, and show much affection for their owners, and a dislike to strangers suddenly introduced to them, unless in the habit of constantly seeing strangers, when their shyness soon wears off.

A. J. Campbell writes: "This lovely Parrot is sometimes vulgarly known as the 'Smoker,' as well as the 'Rock Pebble,' and is frequently found breeding in company with other Parrots in hollow trees overhanging the Wimmera, Avoca, and other rivers. Egg, comparatively large for the size of the bird, stout oval in form, of a soft white colour, with surface of shell very finely granulated. Length, one inch two lines and a-half to two lines and three-quarters; breadth, eleven lines and three-quarters."

Gilbert met with it in Western Australia, in small companies of from nine to twelve, feeding on seeds, buds of flowers, and honey gathered from the white gum tree. Its flight, as its shape indicates, is rapid in the extreme.

The female is much less brilliant than the male, but in both sexes there are varying degrees of intensity in colouring. Some males are almost a jonquil yellow, while others are a dull pale olivaceous green; in some the inner webs of the tail feathers are black, in others the five lateral feathers on each side are margined and tipped with lovely salmon-pink.

The whole of the upper surfaces are an olivaceous green, varying from sickly yellow to almost bright yellow; patch of light yellowish green on the shoulders; tail coverts splashed with red; primaries and secondaries, dull deep blue; tertiaries, blue on inner webs, green on outer, edged with fine yellow line; tail, brownish green on the outer edges of the upper surfaces, and salmon-pink on the tips and inner webs of the under surfaces; irides, black; beak, red; tarsi, black.

Habitats: New South Wales, Interior, Victoria and South Australia, West and South-West Australia.



POULTE. PARROT

POULTE. PARROT

POULTE. PARROT

PLATE XXXV.

POLYTELIS ALEXANDRÆ.

PRINCESS OF WALES' PARRAKEET. GENUS: POLYTELIS.

THE *Polytelis Alexandræ* is the rarest and least known bird of this family, for it is an inhabitant of the Tropics. The only specimen that came under Gould's notice was shot at Howell's Ponds (lat. 16° 54' 7" S.), a place situated somewhere in the neighbourhood of the Gulf of Carpentaria, and visited by Mr. Stuart's Exploring Expedition into Central Australia, when Mr. Fred. G. Waterhouse was fortunate enough to obtain the sole specimen known of this species. Gould gallantly named it after the lady who will, in all probability, one day reign over us.

It differs very little from the best known example of this genus, *Polytelis barrabandi*, except that the crown of the head is blue, and the lower part of the cheeks rose pink instead of yellow.

Gould describes it as having "Forehead, delicate light blue; lower part of the cheeks, chin and throat, rose pink; head, nape, mantle, back, and scapularies, olive green; lower part of the back and rump, blue; shoulders and wing coverts, pale yellowish green; external webs of the principal primaries, dull blue; breast and abdomen, olive grey; thighs, rosy red; upper tail coverts, olive, tinged with blue; two centre tail feathers, bluish olive green; the two next on each side, olive green on their outer webs, and dark brown on the inner ones; the remaining tail feathers tri-coloured – the central portion being black, the outer olive grey, and the inner deep rosy red; bill, coral red; feet, mealy brown."

Total length, fourteen inches.

Habitats: Howell's Ponds (Gulf of Carpentaria), and Interior.

GENUS PSEPHOTUS. (*Gould.*)

THIS family is entirely confined in its range to the mainland of Australia, and is freely dispersed over the whole country, though it is more particularly plentiful on the Eastern Coast and in the Interior. Its position in the family of Parrots is between the *Platycerci* and *Euphemæ*. It seeks for food principally on the ground, and is therefore terrestrial rather than arboreal in its habits, and may be seen in immense flocks in the open country.

PSEPHOTUS CHRYSOPTORYGIUS. (*Gould.*)

GOLDEN SHOULDERED PARRAKEET. GENUS: PSEPHOTUS.

HERE we have a true *Psephotus* that is allied to the *Psephotus pulcherrimus* and *Psephotus multicolor*, but differs from them in the peculiarly rich yellow mark on the shoulder, besides affecting an entirely different locality among the tropical latitudes of North Queensland.

The three specimens in the British Museum were obtained by Mr. Elsey, who accompanied the intrepid explorer, Mr. A. C. Gregory, in his expedition to the Victoria River in 1856. They are male, female, and a young bird. In their crops were found some monocotyledonous seeds.

The young bird has the whole of the head, all the upper surface, wing coverts, throat and breast of a pale glaucous green. The rump and upper tail coverts and the tail like the same parts in the male, but less bright, and the lower part of the abdomen is greyish white, with faint stains of scarlet.

The total length of the male is eleven inches; the female resembles it except that all the colours are paler, and the markings less strongly defined.

In the adult male the plumage generally is of a delicate bluish green, the blue predominating on the breast, head, and upper tail coverts, the green showing on the cheeks and tinging the upper tail coverts. The distinguishing feature, however, is a brilliant patch of yellow on the shoulders and lesser wing coverts, which is sharply outlined against a back of light greyish brown, and breast of verditer blue. The head of the male is capped with black, rising over a forehead of yellow, which extends in a band round the eye. Primaries and secondaries, black, margined externally with blue; feathers of the lower part of the abdomen, vent, and under tail coverts, light scarlet, edged with greyish green; two centre tail feathers, dark green at the base, passing into deep blue towards the extremity, and tipped with dull black; the remaining tail feathers light green, crossed by an irregular oblique band of dull bluish black, beyond which they become of a paler glaucous green, until they end in white; each has a dark stain of bluish green on the margin near the tip; irides, brown; bill and nostrils, bluish horn colour; feet, mealy grey.

Habitats: Port Darwin and Port Essington, Gulf of Carpentaria (Queensland).



a. POLYTELIS ALEXANDRAE.
Princess of Wales Parakeet

b. PSEPHOTUS CHRYSOPS.
Blue-winged Parakeet

PLATE XXXVI.

PSEPHOTUS HÆMATORRHŌUS. (*Gould.*)

RED-VENTED OR BLUE-BONNET PARRAKEET. GENUS: PSEPHOTUS.

THAT it is unwise to base an argument upon an individual experience, and from it to deduct a generalisation as to the whole, is shown over and over again in re-constructing a work upon the natural history of a new country, which is developing fresh matter with every new acre applied to man's use. Gould, who has done so much for bird history in all lands, is occasionally led into this danger, as when, in his description of the *Psephotus hæmatorrhous*, he draws inferences from very slight data for lack of positive knowledge.

According to him, this bird is semi-tropical, rarely being found south of the Namoi and Darling Rivers in New South Wales. He says: "I met with it in tolerable abundance in the neighbourhood of the Lower Namoi, where it appeared to give a decided preference to those parts of the plains which were of a loose, mouldy character, and with which the colour of its back so closely assimilates as to be scarcely distinguished from it. Like the other members of the family, it is mostly observed in small flocks, feeding upon the seeds of the various grasses abounding on the plains." Later authorities have proved that it inhabits equally all the colonies south of Queensland; that it is not generally abundant: on the contrary, it is a rare bird except in one or two chosen localities. This last peculiarity is the more to be wondered at when we learn that the *Psephotus hæmatorrhous* is by no means delicate, but can endure hardships in confinement, both as to exposure and food, that would kill most Parrots, without being in the least degree injured by them. Another authenticated fact makes the anomaly the more unaccountable, it is at times a most prolific layer, depositing as many as ten eggs in a clutch. This prolificacy has been observed about Kerang Plains, in Victoria, where it is proportionately abundant.

During the breeding season it retires to belts of timber trees for the purpose of nidification, where it will select a hollow tree, and lay its eggs without much attempt at nest-building.

In appearance we find in this species a pleasing departure from the changes that are rung upon the greens, blues, and crimsons of the majority of Parrots; for, though none of these colours are absent, yet the prevailing tone is a most restful olivaceous green that clothes the head, back, and throat. We miss the mild benignity of expression that prevails among so many of the *Platycerci*; instead there is a vicious cast in the eye, which is accounted for by its latent savagery of disposition. Even the attitude of the body presents the same aggressive temperament, though it is also one of the most sprightly and intelligent of Parrots. Few surpass it in the qualities that go to make a satisfactory pet, in spite of the fact that it has little power of imitation.

A pair of these birds play together in a most amusing manner, "rolling over and over in the sand, or sitting on the perches and cawing to each other. . . . Their elaborate bowings and antics are calculated to produce shouts of merriment." But under this taking exterior it often conceals a most cruel disposition, for if placed in an aviary it will invariably mutilate or kill all weaker birds than itself, though months of good fellowship may go by without this murderous propensity being aroused. The *modus operandi* is quite in keeping with the suave grace of its manner. Without any warning, it will sidle up to its victim, seize him by the wing, and begin to gnaw him savagely, and finally leave him dead or mutilated past redemption. It is only fair to add that the *Psephotus hæmatorrhous* varies in disposition as much as human beings, and that many of them live peaceably with their weaker fellows, even under the unnatural and demoralising influences of captivity.

The food of this bird consists in its wild state of native grass-seeds, though it soon adapts itself to a new regimen, and acquires a partiality for canary-seed, millet, hemp, and boiled maize; it is very fond of green food of all kinds, especially the bough of a tree like the elm and poplar, which it picks to pieces with every sign of delight.

The female is a slightly faded reproduction of the male.

Egg, round and white; shell, thin; length, eleven lines; breadth, ten lines.

The forehead and cheeks, ultramarine blue; throat, head and back, olivaceous green, washed with yellow on the rump and upper tail coverts; upper part of the abdomen and flanks, primrose yellow; centre of the abdomen and under tail coverts, crimson-red; shoulders, reddish chestnut; basal half of the external webs of the primaries and secondaries and edge of the wing, rich indigo blue; apical half of the external web of the primaries, fringed with grey; two centre tail feathers, light olive green, passing into deep blue at the tip; the remainder, deep blue at the base, largely tipped with white, the blue gradually blending with the white on the external web.

Habitats: New South Wales, Victoria, South Australia, West and South-West Australia.

PSEPHOTUS XANTHORRHUS.

YELLOW-VENTED PARRAKEET. GENUS: PSEPHOTUS.

THE Yellow-Vented Parrakeet is so similar in appearance to the Red-Vented, that the only difference is found, as indicated by the name, in the under tail coverts and the centre of the wing. The likeness is so strong, that Gould himself inadvertently applied the term *Hæmatogaster* to two distinct species before he visited this country. He soon discovered his mistake, and agreed with the late Prince Charles Bonaparte that it would be well to avoid further complications by abolishing the term *Hæmatogaster*, substituting instead *Hæmatorrhous* for the Red-Vented, and *Xanthorrhous* for the Yellow-Vented. Popularly speaking, both species are known as the Blue Bonnet.

The *Psephotus xanthorrhous* affects the same localities as its near congener, *Psephotus hæmatorrhous*, though its peculiar abode is the mallee (*eucalyptus dumosa*) country bordering the Murray River, where we may surmise it finds food ambrosial in the manna yielded by this shrub, for many birds delight in it. "It is the nidus of an insect, and consists of white threads clotted together by a syrup proceeding from the insect which spins those threads, and dries into a starch-like substance," Mr. Maiden tells us in his "Useful Native Plants."

This is a very pretty Parrakeet, and is to be met with at times through South Australia generally, except in the most southerly parts.

The female is not so brilliant in colouring nor so distinctly marked as its mate.

The length is not quite twelve inches, but varying at times, according to climatic and other influences.

Forehead, cheeks, and lores, ultramarine blue; crown of head, upper surfaces, and chest, delicate yellowish grey, yellow tint, becoming deeper on rump and upper tail coverts; edge of shoulders, tourquoise blue; great wing coverts and external webs of basal portion of primaries and secondaries, rich deep blue; remainder, blackish brown with white margins; hinder portion of the great coverts and tertiaries, deep saffron yellow, forming a patch along the centre of the wing; flanks and under tail coverts, rich primrose yellow; abdomen, rich red; two centre tail feathers, light olive green at base, merging into dark blue at the tips; remaining feathers, deep blue at base, gradually passing into white at the tips; bill, light brown colour; feet, mealy brown.

Habitats: New South Wales, Interior, Victoria and South Australia.

PSEPHOTUS PULCHERRIMUS. (*Gould.*)

BEAUTIFUL PARRAKEET. GENUS: PSEPHOTUS.

THIS parrakeet is so graceful in form, so dainty in the harmony of grave and gay plumage, that it can lay claim to being one of the loveliest of the whole *Psittacidæ* yet known. Its disposition coincides with this attractive outward appearance, for it is very shy and timid in its natural state, though susceptible to gentle treatment, and may be completely tamed.

The first known specimens were procured by Gilbert on the Darling Downs, where it was observed feeding in small families on the seeds of grasses and other plants growing on the plains. In New South Wales it feeds on the pollen of flowers and honey, flies and small insects during summer, and in winter upon such insects and seeds as it can find, so that it may be regarded as an omnivorous feeder.

Of a slim, graceful shape, the *Psephotus pulcherrimus* measures from twelve to thirteen inches in length, five inches of which is occupied by the tail.

Gould was of opinion that the sexes were alike, but in this he is proved mistaken by the more extensive knowledge we now possess of the birds. As a matter of fact, the sexes differ immensely in colour, the female being as quietly dressed as the male is gorgeous. She (according to Greene) is "yellow in those parts where her mate is green and blue, and pale green where he is yellow, her head and wings are of a paler grey than his, and her shoulder bands are yellow with a tinge of red, a few specks of the same colour appearing on her breast. The young males can be distinguished from their mother by their red frontlet, red shoulder stripes, green cheeks and reddish abdomen, while their wings and back are nearly as dark as those of their father."

The *Psephotus pulcherrimus* is known in Queensland to resort sometimes to old deserted ant-hills to breed, where it lays a white egg, having little lustre, and not quite so round in form as the known eggs of the same genus. Length, eleven lines and a-quarter; breadth, nine lines.

Band across the forehead bright red, fading into pale yellow round the eyes, lores, and cheeks, which again blends with the green of the under surface; crown of head and nape, blackish brown; back of neck and upper tail coverts, metallic green; shoulders, red; primaries and secondaries, black, edged with bluish green; under wing coverts, metallic blue; two middle tail feathers, olive brown at the base, passing into greenish blue at the tip with olive reflections; the three outer feathers on each side have a narrow zig-zag band of black about half-way down from the base, then greenish blue to the tip, inner webs fading into white near the extremity; throat and chest, emerald green, each feather tipped with metallic blue; abdomen and under tail coverts, scarlet; irides, dark brown; bill, horn colour, blackish grey at base.

Habitats: Port Denison, Wide Bay District, Dawson River (Queensland), New South Wales.



a *PSITTACUS ANTHOPHUS*
Leucis vertes (P. anthopus)

b *PSITTACUS ANTHOPHUS*
Leucis vertes (P. anthopus)

c *PSITTACUS ANTHOPHUS*
Leucis vertes (P. anthopus)

PLATE XXXVII.

PSEPHOTUS MULTICOLOR. (*Gould.*)

MANY-COLOURED PARRAKEET. GENUS: PSEPHOTUS.

IT is scarcely possible to imagine a lovelier bird than this little parrakeet. The name "many-coloured" is strictly a correct definition of its plumage, but is also justice without mercy, for the impression conveyed to the mind might be of a conglomeration of colour the reverse of beautiful to the artistic sense. In reality, we have in this instance a practical demonstration of the law that "the highest art only can produce the highest art." Red, green, and blue do not afford much scope for harmonious blending in their crude bases; but, toned and softened as they are in the bird before us, they become each the perfect complement of the other and convey to the eye a gratified sense of the beautiful in Nature. A. P. Forbes Leith, in his pamphlet on the "Birds of Victoria," indulges in unwonted rapture when speaking of *Psephotus multicolor*. "This charming bird must be seen in freedom before one can form any idea of its brilliant many-coloured plumage, its head and neck throwing off the rays of the emerald; its breast the beautiful verdure of the young shoots of the Murray pine. Its wings exhibit the richest colours of the Trogon, the Regent Bird, and the Azure Kingfisher; while the back seems as if the Prussian blue and gamboge of the wings had blended together and formed a green of the richest hue found in the natural order of the Coniferæ."

Gould classes the *Psephotus multicolor* as a true *Psephotus*; but later naturalists, who have had more extended means of observing it in the different colonies, both wild and captive, are inclined to doubt its right to the position, and say it would be more correctly included among the Lories. They base their argument upon the evidence that it seeks its food among trees and shrubs rather than on the ground. In Victoria, where its habits have been most closely watched, "it abounds in the forest belts bordering the Murray River, and in other parts of the colony where the scrub is thick, but does not, as a rule, appear far south." During the greater part of the year it feeds on the pollen and nectar of the eucalyptus and other flowering trees, but when they cease, recourse is made to soft berries.

Nidification takes place during the months of September and October, when a set of from three to five eggs are deposited in a hollow tree, on the soft crumbled pith that lies at the bottom of the hollow. Two broods are raised during the breeding season.

The egg is white and oval in shape, with the surface very slightly granulated. Length, eleven lines and a-quarter to eleven lines and three-quarters; breadth, eight lines and a-quarter to nine lines.

The *Psephotus multicolor* possesses a bright, lively, and at the same time gentle disposition, and is capable of very strong affection, as is shown by the attachment between the sexes, so that the attractiveness of its outward person is fully borne out by its natural disposition. The male has a soft musical voice, of which he makes much use, especially in the pairing season.

The female is a very sober likeness of her brilliant mate: her forehead is yellow, but of a paler shade than in the male; the upper surfaces, dull olive brown; neck and breast, reddish grey; primaries, green, with black extremities; the abdomen, yellowish green; the under tail coverts, yellow; the tail, greenish blue, but lighter than in the male, and her shoulder-patch, red instead of yellow, so that she is not much dissimilar from the female of *Psephotus pulcherrimus*, from which, however, she is easily distinguished by the greater size of her red shoulder-patch; and from the young male of the latter species she will be known by her reddish brown breast and the deeper colour of her wings and tail.

The adult male has upper surfaces, cheeks, throat, and breast of at least a dozen shades of green, varying from palest emerald to deepest grass green; forehead, patch on shoulders, and wings, brilliant orange, deepening in some birds to reddish chestnut; back of head, abdomen, and vent, scarlet, paling into yellow on the

under tail coverts; rump, crossed by three distinct bands of yellowish green, dark green, and reddish chestnut, ending with upper tail coverts of pale green; two centre tail feathers, green at base, merging into deep blue and black towards tip; two next feathers on either side fading into bluish green; all the tail feathers, except the four middle ones, crossed by a band of black near the base; bill, horn-colour; tarsi, brown.

In appearance this bird is small and delicate-looking, slightly larger than *Psephotus pulcherrimus*, though the actual total length given varies from ten to eleven inches.

Habitats: New South Wales, Interior, Victoria, and South Australia.

PSEPHOTUS HÆMATONOTUS. (*Gould.*)

RED-RUMPED, RED-BACKED, BLOOD-RUMPED PARRAKEET. GENUS: PSEPHOTUS.

THE Red-Rumped Parrakeet is a long, slender bird, clad in a prevailing green hue. It is hardy and prolific, and is commonly found throughout the Eastern and South-Eastern Colonies of Australia, from Port Darwin to South Australia. It is one of the few exceptions to the "songless birds of Australia," for it has "a pleasing, whistling note, which is poured forth both while perching on the branches of the trees and while flying over the plains." Among the Germans this singing propensity has earned for it the name of "Singsittich"—for it adapts itself so easily to circumstances, that it breeds and carries on its natural avocations almost as well in captivity as in a natural state.

The *Psephotus hæmatonotus* is terrestrial in its mode of life rather than arboreal, and runs over the ground with a graceful activity not generally observable among the *Psittacidae*. During the winter it associates in flocks of from twenty to a hundred, which run over the ground like Plovers in one great mass; yet each one is accompanied by his mate, to whom he is devotedly attached. Of a cheerful gregarious disposition, this species shows a decided preference for open grassy valleys and bare hill-tops, rather than wide and rolling plains. In the early morning whole flocks are to be seen perched on some leafless gum bough, sitting close together along the whole length of the branch, until they are induced to descend by the pangs of hunger, or some hawk disperses them. Despite their terrestrial proclivities, these birds are very strong on the wing; they wheel round and round in the sunshine, or dart in and out among the trees, with marvellous quickness.

The period of incubation lasts through the spring and into the summer, during which time a pair will rear three or four broods. Five or six eggs, white in colour, and measuring eleven lines long by eight lines and a-half broad, are laid without any nest in the spouts and hollows of gum trees. We are indebted to Mr. Archibald J. Campbell for the following interesting note: "The female of this graceful parrakeet appears solely to perform the task of incubation. I have watched her mate feeding her in or near the nest-hole. He performs the operation something after the manner of a common pigeon feeding its young, by connecting beaks, and discharging at intervals the contents of his crop into her mouth with spasmodic jerks, while she keeps up a continual or hissing noise." That this is an exceptional proof of marital fondness is shown by the observation of others, who say the male renders no assistance to his mate in the process of incubation, except to sit close to the hollow log and sing cheerfully; he does not even seem to feed their young ones till they are old enough to fly about after him and cry for food.

Before the invasion of the white man and his inevitable civilisation, the *Psephotus hæmatonotus* lived principally upon grass seeds and insects; now he exhibits a strong predilection for hay stacks.

The length of the male is about ten inches; the female not quite so much.

Head, back of neck, throat, and upper part of breast, rich grass green, with blue reflections in certain lights, particularly on the head and face; back, brownish green, with a red patch on the rump; upper tail coverts and two centre tail feathers, green at the base, gradually passing into delicate greyish white on the inner webs

and tips; abdomen, yellow; under surfaces, greenish yellow; outer edges of shoulders tipped with yellow and metallic green; primaries and secondaries, bluish green; tertiaries, bright blue, tipped with brown; bill, horn colour; feet, brown; irides, pale brown.

The female has no pale green on the head or cheeks; but all the upper surface is dark, brownish or greyish green, with a mottled appearance, arising from the fact that each feather is margined with a narrower line of a deeper shade of the general colour of the plumage; the breast is a mixture of grey, green and yellow, with the tips of the tail feathers white, the rest, deep blue; the shoulders, blue; and the rump, bright green. Thus it is to be seen that the sexes are quite dissimilar, and might be mistaken for different species.

The young male differs from the mature one in having head, neck and breast greenish grey, no red colouring on the rump, and no yellow on the centre of the abdomen; and the bases of the secondaries and some of the primaries are white: but in six or eight months it is impossible to distinguish them.

Habitats: Wide Bay District, Dawson River (Queensland); Richmond and Clarence River Districts (New South Wales); Interior, Victoria and South Australia.

NASITURNA PUSIO. (*Ramsay.*)

OF this most minute bird little is known, beyond the fact that it exists; and in describing it we cannot do better than quote the words of our greatest living authority on the subject, Dr. Ramsay: "This curious little bird," he says, "has characteristics which appear to link it, from the form of its feet and bill, with some of the largest of the group of Parrots—the Cockatoos (*Cacatuinae*). On examination, its sternum, however, does not show any affinity to that group, but rather places it, from the absence of the furculæ, among the *Pezoporinae*. On the whole, its characters are so anomalous that it is difficult to decide among what family of the *Psittacidae* it should most properly be placed; and only by a close comparison and examination of its entire skeleton can this be decided. I am inclined to think it will be eventually placed in a separate family. The peculiar formation of the tail feathers, the bare shafts of which being produced with spines at the tips, I believe, is not found in any other known genus of Parrots. When we know something of the habits of this species, it will probably be found to be strictly arboreal, and confined to the dense scrubs where it could find abundance of food without extensive flight, for which its wings are not adapted. The contents of the crop appear to be portions of fruit; the gizzard contained minute grains of sand and a few seeds, from which one might suppose it to be of terrestrial habits. The absence of the *os furcatorium* would also warrant this opinion."

Remarkable as being the smallest representative of the Parrot tribe, the *Nasiturna* is scarcely larger than an ordinary humming bird, but there the likeness ends, as it is by no means beautiful, for the disproportionately large head gives it the appearance of being unfairly balanced, and the plumage is dingy.

Neck, back, wing feathers, grass green; tertiaries, brown; the short square tail, metallic blue; forehead, throat, cheeks, and lores, buff brown; breast, greenish yellow, melting into decided green on abdomen and thighs; under tail coverts, buff; irides, brownish yellow; feet, buff; bill, horn colour at tip, black at base; on the crown of the head there is a patch of drab. Length, three inches and a-quarter.

Habitat: Duke of York Island.



PLATE XXXVIII.

GENUS LATHAMUS (*Lesson*).

AFTER much discussion as to whether the only known species of this genus should be placed among the *Nanodes*, the *Euphemæ*, or the *Trichoglossi*, naturalists have at last decided to form it into a distinct type as *Lathamus*. In its habits and economy it is most nearly allied to the *Trichoglossi*, being a honey-eater like them.

LATHAMUS DISCOLOUR. (*Gould*.)

SWIFT LORIKEET. GENUS: LATHAMUS.

WE have here a small, pretty bird, about nine inches and a-half long, and generally green on the upper and under surfaces, with the difference that it is a soft grass-green above and a yellow-green below. It is migratory in its habits, passing the breeding season and summer in Tasmania, whence it crosses to the mainland in great flocks, flying fast and high, and steering northward, some bound for Victoria, and some for New South Wales or South Australia, and returning to the north for the rest of the year.

As a honey-feeder, it is strictly arboreal in its habits, and grows so venturesome in the pursuit of the nectar hidden in the soft ball-like heads of the creamy gum blossoms that it will perch upon a tree in a busily populated locality and gather great drops of liquid sweetness, totally regardless of people passing within a few feet of it.

In Tasmania the Swift Lorikeet delights most in the blue gum (*eucalyptus globulus*), and collects so much honey from the aromatic blossoms that if one is shot in the act of feeding, and held up by its feet, a stream of liquid amounting to a dessert-spoonful will be discharged from its mouth. The plumage of these birds so closely assimilates in colour to the gum tree foliage, and they creep so quietly, yet with such agility, from branch to branch, that it is almost impossible to distinguish them, except by the trembling of the leaves and the slight scratching sound as beak or claw alternately act as propellers. They are beautiful and graceful little birds, but, like the *Trichoglossi*, are not easily tamed, nor do they bear confinement well. To meet the requirements of migratory habits, Nature has endowed them with a strong swift flight. They may be seen in companies of from four to twenty passing over towns, sometimes chasing each other in sport like the European Swifts, at others passing from garden to garden, or gum forest to gum forest, in search of honey-bearing flowers.

Of their nidification little is known, as they invariably choose holes in the loftiest and most inaccessible trees. The egg is white, eleven lines and a-half long by ten lines broad. They differ from the *Trichoglossi* in that they have no musky smell, nor do they jump in their movements.

The sexes are alike in colour, but the female is smaller and less brilliant in all her markings. The young ones moult early, and assume the adult plumage.

Forehead and chin, red, with a yellow spot at the gape; crown of head, deep blue in some, bluish green in others; under wing coverts, tip of shoulders, and under tail coverts, deep red, marked with black; upper wing coverts, blue at base, fading into yellowish green; primaries, deep blue, finely margined with yellow; secondaries, greenish blue; tertiaries, brown, tipped on outer edge with yellow; pointed fan-shaped tail, reddish brown in centre, four outer feathers pale blue on outer webbs; bill, horn colour; irides, hazel yellow; tarsi, dark grey.

Habitats: Wide Bay District (Queensland), Richmond and Clarence River Districts (New South Wales), Interior, Victoria, South Australia, and Tasmania.

GENUS MELOPSITTACUS. (*Gould*).

THERE is but one known species of this form, and it is strictly gregarious. It assembles in vast flocks upon open downs or plains covered with grasses, upon whose seeds it subsists entirely. Of a hardy adaptive disposition, it is admirably adapted to captivity.

MELOPSITTACUS UNDULATUS. (*Gould*.)

WARBLING GRASS PARRAKEET, BUDGERIGAR, SHELL PARRAKEET, ZEBRA PARRAKEET, LOVE BIRD. GENUS: MELOPSITTACUS.

FOR so small a bird, the *Melopsittacus undulatus* has an overpowering number of names—the penalty of popularity combined with hardihood and a wide distribution. However, the best known name is the native one, Budgerigar, signifying “pretty bird.” The almost equally common one, Love Bird, was bestowed upon it without an extensive idea of fitness to its the disposition, for, though it is capable of a large amount of affection, and is fond of society, yet the supposition that it will die broken-hearted, should anything happen its mate, is one of those pretty fables which do not bear the test of experiment. More than once Sir Budgerigar has proved himself both false and fickle. Forbes Leith in his experience of these birds says: “I have a pair at present, and the male has deserted his mate for the company of a Java Sparrow, which he plays with and teases alternately all day long, to the extreme disgust of his once-loved companion.” There is no Parrakeet more popular as a cage pet than this one, as it possesses in a large degree all those qualities that go to make a willing and cheerful captive. The male has a sweet warbling note, and is never tired of hearing his own voice; it is a matter of no consequence whether he has an audience or not; he is equally pleased to take a stick into his confidence, and will chatter to it by the hour, running his beak up and down it after a fashion that strikes the on-looker as rather ludicrous; he will even continue his warblings through the night if placed in a lighted room where conversation is going on.

The single species that exists of this genus is widely distributed over the mainland of Australia from the Gulf of Carpentaria to Western Australia, and is usually found in immense flocks feeding together on the grassy plains. As soon as the grass seeds are exhausted in one colony or locality, the birds go off on migratory wing to another, where the change of latitude is sufficient to make an alteration in the time of the seasons. Thus it affects the southern colonies during spring and the breeding season, when the unripened state of the grass seeds offers a soft food for the young ones; but as soon as they are capable of a long journey, the whole flock betakes itself to more northern latitudes. The flight is very straight and swift, and usually accompanied by a screeching noise.

Incubation is at its height in December, and the development of this species is so rapid that the young bird is capable of providing for himself at the end of a month from the time of hatching. In captivity this precocity is extraordinary, instances having been known when they have paired, laid eggs, and reared their young before they had moulted their nest feathers, and were themselves not more than three or four months old. Unlike the habit of many other genera, the male Budgerigar does not help in the task of incubation; but upon him devolves the duty of feeding his mate while she is sitting, and doing the principal part of the rearing of their little ones, which occupies his time fully. In the natural state, two broods of three or four eggs are reared in the season, but in domesticity they raise three or four broods of from four to nine eggs, and will breed all the year round if kept indoors. Some hens sit so continuously that unless the cock is very attentive in supplying an abundance of food they will die on the nest soon after hatching. But the abnormal prolificacy of one year is usually counteracted the next by a single brood of two.

The eggs are pure white, eight lines and a-half long by six lines and three-quarters broad.

Both terrestrial and arboreal in their habits, these birds take refuge in the heat of the day among the gum trees, where they sit motionless among leaves harmonising so well with their colour that they avoid detection. In the early morning they delight to roll in the long dewy grass, but seldom bathe unless driven to this method of cleansing themselves by the lack of wet grass. Naturally, they seem to have a predilection for brackish water, and very much appreciate a bit of rock salt or fresh cuttle fish back to peck at in captivity. The usual term of life in a Budgerigar is about ten years, but they are not much good for breeding after four years.

As might be expected from such adaptive birds, the plumage in captivity is open to considerable variation. Some are entirely yellow; others a faint yellowish green, with scarcely a trace of the undulating markings that characterise the plumage in the natural state; while in Belgium, aviarists have even gone so far in cross breeding as to procure a blue variety. But all these departures have been obtained at the cost of a bird far more delicate and less beautiful than the green-coated sprightly original. The first Budgerigars seen in England were taken there by Gould in 1840. Since then a regular trade has sprung up in them, and thousands are annually trapped and exported from the southern parts of Australia.

Size of adult male, seven inches. The female can be recognised by her smaller size and the bluish cream tint of her nostrils, which become brown at nesting time. These are the only differentiating marks. The young birds are distinguished from adults by the crown of the head, which is crossed by fine bars of brown instead of being purely yellow, and the absence of the deep blue spots on the throat.

Head, cheeks, and throat, bright yellow, each cheek ornamented with a patch of rich blue, below which are three circular spots of bluish black; back of head, ear coverts, nape, upper part of back, scapularies, and wing coverts, greenish yellow, edged with blackish brown; wings, brown, outer webs of feathers deep green, margined with greenish yellow; rump, upper tail coverts, and all under surfaces, bright green; two centre tail feathers, blue; remainder green, crossed in the middle by an oblique band of yellow; irides, yellowish white; nostrils, blue; tarsi, lead colour.

Habitats: Gulf of Carpentaria (Queensland), New South Wales, Interior, Victoria, and South Australia.

CYCLOPSITTA COXENII. (Gould.)

LORIKEET. GENUS: CYCLOPSITTA.

THIS is a short clumsy bird, repented by two species, one of which is peculiar to one district in the north of Queensland; the other is a little more widely distributed, but is by no means common. This latter, *Cyclopsitta Coxenii*, is the subject of our present notice.

In appearance it is a short clumsy bird, whose head and beak are quite out of proportion to the squat body and short vandyked tail. It has the heavy repellent expression which betokens brooding silence, or a sulky temperament, and is entirely lacking in the vivacity usually associated with the name of Parrot. It is not astonishing, then, to find that the bird is singularly silent; subsists upon the fruit of the Moreton Bay fig (*Ficus macrophylla*), and is therefore strictly arboreal in its habits.

The first specimens seen were shot by a sawyer in the scrub forests, thirty miles from Brisbane, in June, 1866. His intention was to provide for himself a dainty pudding of green Parrakeets, but being something of an ornithologist, as soon as he picked up his birds he found they were different to the ordinary Parrots, and forwarded a specimen to Mr. Waller, who visited the locality soon after, and as the result of his investigations wrote to Mr. Gould: "The large scrub of the mountainous districts about forty or fifty miles north of Brisbane, which has been but little visited by Europeans, appears to be the natural home of this bird. There it sits on the large and lofty fig trees, silent as death, and its presence can only be detected by attentively listening to the falling of the refuse of the wild figs, upon which it seems solely to subsist, and the hard tops of which are easily cut off with its strong bill. All the specimens I examined had their crops filled with the soft interior portion, but it appears to reject

the fully ripe fruit. Its colouring so closely resembles that of the large leaves with which it is surrounded that it almost defies detection, and the only chance of obtaining examples is by watching the falling of the refuse of its food, and never moving your eyes until you have marked your bird, or it is ten to one you will be unsuccessful. When it is finished with one bunch of figs, it silently removes to another. It emits no call while on the trees, but when it leaves them utters a very low sound resembling 'cheep,' 'cheep.'"

The sexes are alike in plumage; but the female is rather larger than the male.

General surfaces, bright green, turning to dull yellow under the wings; a slight indication of red on the forehead; cheeks and lores, red, faint tinge of blue on throat below; inner side of wing coverts, red; tertiaries, bright blue at base, blackish brown at tips; wing coverts, back, and tail, darker green than under surfaces; beak, blackish horn; feet, palish green; irides, hazel.

Total length, seven inches and a-half.

Other species of this genus are found in the islands of Torres Straits and the Moluccas.

Habitats: Wide Bay District (Queensland), Richmond and Clarence River Districts (New South Wales).



G.J. BRODOWSKI. FECIT.

a. LATHAMUS DISCOLOR.
Swift Lorikeet (Gould)

b. MELOPSITTACUS UNDULATUS
Warbling Grass Parrakeet (Gould)

c. CYCLOPSITTA COXENII.
Lorikeet (Gould)

PLATE XXXIX.

GENUS CALOPSITTA.

THIS, like the last, is another unique genus, whose only representative is to be found very fairly distributed over the continent of Australia. It is gregarious and migratory, and equally adapted for life on the open plains or rolling downs. The two birds are often found associated.

CALOPSITTA NOVÆ HOLLANDIÆ.

COCKATOO PARRAKEET, OR COCKATIEL. GENUS: CALOPSITTA.

THIS solitary example extant of the genus is to be met with commonly throughout Australia within a radius of a hundred miles of the coast. It has the same migratory and gregarious habits as the *Melopsittacus* and *Euphemæ*. Gould first found it breeding in the apple tree (*angophoria*) flats about the Hunter and Peel Rivers. The ground at times was covered by flocks of them, all busy picking up food, and hundreds together might be seen on the branches of dead gum trees standing near the water. From these circumstances he gathered that they were more numerous on the eastern than on the western coasts, and that water close at hand was an indispensable condition of their locality.

From February and March till the following September the Cockatiels spend their time in the far north; but as soon as instinct tells them that the season of reproduction is at hand they make a simultaneous movement southward, branching east and west according to inclination, and arrive at their destinations precisely at the same time, whether it be the Liverpool Plains in New South Wales, or the York District in Western Australia. As soon as the breeding and rearing of broods is accomplished they wend their way northward again. To accomplish these long flights Nature has provided the Cockatiel with strong pinions, by which it moves with long, easy motion. Upon rising from the ground it makes for the nearest tree, and selects a dead branch by preference, upon which it perches lengthwise. Its legs are made strong and long to fit it to be a good walker and runner.

As its name implies, this is a miniature imitation of the Cockatoos, though it has not their power of moving its crest; but in every other respect it is a much more pleasing bird, for it has a bright, friendly, and imitative disposition that renders it the king of pets. Caught young, the male may be trained to perform all manner of pretty and engaging tricks. It is a very noisy bird, and from its love of mimicry will make fair imitation of the song of the Budgerigar or Canary. As much cannot be said of the female, who is hopelessly dense, and never learns anything. Even as an exemplary mother she scarcely comes up to the mark, but in this direction her duties are so arduous that it is scarcely fair to condemn her for taking relaxation when she can get it; and she makes up for this one dereliction of duty by being almost silent—a virtue that cannot be too much commended in view of her mate's noisiness. At most she gives an occasional ghost of a shriek, or hisses hoarsely like a young owl when disturbed from his nest. The young ones hiss in the same way from a very early age.

Unlike most of the Parrot family, the Cockatiel seems to have nothing of the whittling propensity so distinctively a trait in the Cockatoo proper; it does not even know how to hollow out a hole for its own nest, and will lay on the ground if driven to extremities. This only happens in captivity; in natural conditions it speedily chooses a hollow in a gum tree near water, where the female deposits on an average five or six eggs, and sometimes as many as nine, which are hatched in twenty-one days from the laying of the last one. The male Cockatiel is a most attentive husband, and takes his turn on the nest with exemplary punctuality and patience, beginning his watch between five and six in the morning, and ending between four or five in the afternoon,

during which time he only leaves for a few minutes to go in search of food and water. But when his term of duty has expired, and he considers it his mate's turn, there is sometimes a most amusing altercation between them. She is of a contrary opinion, and refuses to take up her post; he scolds, and from scolding they fight; if she still refuses to give up her liberty, he chases and pecks her into submission; and eventually she goes back, at which he gives a victorious chuckle, and flies off in search of food. When the young are hatched the mother scarcely leaves them for the first three days, and she alone appears to feed them; but as they get stronger she leaves the care of them more and more to their father. It often happens that she begins to lay again, and the eggs are actually hatched before the first brood is fully fledged; but this is a development of captivity, where food may be procured without the trouble of foraging for it, and broods are reared continuously for nine months in the year. To meet the exigencies of such prolificacy the young ones fledge very rapidly, and are ready to leave the nest fully grown in about three weeks, and after a few days' tuition can provide for their own wants.

This is such a healthy, hardy bird that it lives to an immense age. Greene instances one which has been in his possession upwards of ten years, has outlived three wives, and is still hale and hearty. He does not know what age it was when he got it.

The total length of the Cockatiel is eleven inches, five of which are taken up by the tail.

The egg is a chalky white. Length, twelve lines; breadth, nine lines.

The plumage of this bird without being beautiful, is decidedly pretty, with its bold contrasts of colour; the general hue is ashen grey, darker on the upper than on the under surfaces of the body; the shoulders and outer edges of the wings are pure white; the crest and face are citron yellow in the male; on the ear coverts is a patch of brick red; back of the neck, two centre tail feathers, and the external margin of the primaries, brownish grey; irides, dark brown; bill, bluish lead colour, light on the side of the lower mandible; tarsi, bluish grey.

The female differs in having crest and face of a dull olive yellow, the former becoming darker at its extremity; the throat greyish brown, and the back lighter than in the male; the lower part of the abdomen and upper tail coverts, yellow; four middle tail feathers grey, remainder yellow; the whole transversely and irregularly barred with lines of brown, with the exception of the outer web of the outer feathers on each side, which is pure yellow.

The young of both sexes are like their mother in having the under surface of the tail barred, but even when three weeks old, the males can be distinguished by the perceptible shade of yellow on their faces.

Habitats: Derby (N.W.A.), Port Darwin and Port Essington, Gulf of Carpentaria, Wide Bay District (Queensland), New South Wales, Interior, Victoria, and South Australia, West and South-West Australia.

GENUS TRICHOGLOSSUS. (*Vigors and Horsfield.*)

IN the group of Honey-eating Lorikeets we find a class of birds in direct opposition to the *Platycerci*. Not so numerous as the seed-feeding Parrots in points of species, they are individually more abundant and more generally dispersed over the whole country yet known, and members of the genus are found in the Moluccas and New Guinea.

In structure, habits, food, mode of nidification, these two families, *Platycerci* and *Trichoglossi*, are widely different. In the simple tongue, capacious crop and stomach, thin skin, delicate flesh, and absence of strong odour, the *Platycerci* are a great contrast to the *Trichoglossi*, with their pencilled, brush-like tongue, tiny stomach, thick skin, tough flesh, and fœtid odour; they possess, besides, a strong *os furcatorium*, which is entirely wanting in the others. Thus it is, that while the *Trichoglossi* are powerful, swift, and arrow-like in their flight, the *Platycerci* are feeble, moving in a succession of undulations near the ground, and never fly far. The manner in which each approach, alight, and quit a tree is indicative of much: the *Trichoglossi* make a rapid dash into it, and alight upon its branches without pausing a second, and quit them again in the same headlong fashion, leaving behind them a long trail of sound through their deafening screech; the *Platycerci* rise to the branch with a quiet, wave-like movement, and leave it again as quietly, no sound being heard but their inward piping note.

The *Trichoglossi* lay two eggs at a time, the *Platycerci* from six to ten.

TRICHOGLOSSUS VERSICOLOR. (*Gould.*)

VARIED LORIKEET. GENUS: TRICHOGLOSSUS.

ALTHOUGH this little Parrakeet is almost entirely clothed in shabby and brilliant greens, yet it would be quite impossible to confound it with any other species, for it is distinguished by each feather having a line of bright green or yellow down the centre; there is also a red patch on the chest, which is not unusual, though in no other instance are the feathers streaked down the centre with yellow.

So far the Varied Lorikeet is only known to inhabit North, West, and South Australia, where it frequents the various eucalypts in search of its suctorial food. Gilbert writes that it "congregates in immense numbers; and when a flock is on the wing their movements are so regular and simultaneous it might easily be mistaken for a cloud passing rapidly along, were it not for the utterance of the usual piercing scream, which is frequently so loud as to be almost deafening. They feed on the topmost branches of the *eucalypti* and *melaleucæ* (tea-trees). I observed them to be extremely abundant during the months of August on all the small islands in Van Diemen's Gulf. The stomach is membranous, and extremely diminutive in size. The food consists of honey and minute portions of the blossoms of their favourite trees."

In common with all the rest of its species, this pretty little bird is not fitted for captivity, and soon dies if confined, partly from the difficulty of providing sustenance at all like the natural food, and partly from the constraint put upon all its motions.

The male has the top of the head a dull rich red; round the neck a ring of bright blue; back, dull green; rump and upper tail coverts, light yellowish green; a spot of red on the breast; inner web of tail and outer edge of secondaries and tertiaries, bright yellow; under surface, light yellowish green; irides, dull yellow, with very narrow ring of dark red next pupil; bill, white; tarsi, brownish black.

The female has only faint indications of red on the forehead; the general colouring is a more vivid metallic green; feet, whitish brown; irides, black. In size she is slightly larger than the male.

Habitats: Derby (North-West Australia), Port Darwin and Port Essington, Gulf of Carpentaria, Cape York, West and South-West Australia.

TRICHOGLOSSUS PORPHYROCEPHALUS. (*Gould.*)

PORPHYRY-CROWNED LORIKEET. GENUS: TRICHOGLOSSUS.

THIS is a pretty little bird, six inches and a-half long, which is found only in the south-eastern, south, and south-western colonies. Like the rest of the family, it is a true honey-eater, and arrives in the district at the flowering season, in company with *Trichoglossi concinnus*, *Novæ Hollandiæ*, and *Pusilla*, all of which may be seen on the same tree together. As this tribe of birds depends solely on the gum blossoms for subsistence, they may be looked for in vain when those trees are not in bloom. They usually move in parties of twos and threes.

The sexes are exactly alike in size and colour; the plumage is very bright in the spring of the year, like others of the family. Forehead, reddish yellow; crown of head, deep indigo blue; ear coverts, reddish yellow; throat, breast, and upper part of abdomen, delicate greenish grey; back of neck and wing coverts, yellowish green; back, brownish green, merging into vivid metallic green on lower part of tail coverts; outer web of tail feathers, bright green; inner ones, orange-brown, deepening at base into orange-red; under tail feathers, orange-red at base, fading into yellowish green at tip; tip of shoulder, metallic blue; outer webs of primaries, secondaries, and tertiaries, green, edged with faint line of yellow; inner webs, black, edged with yellow; under tail coverts, bright red; beak, black; irides, brownish yellow; tarsi, black.

Habitats: New South Wales, Victoria, South Australia, West and South-West Australia.



G. J. BRODOWSKI. FECIT

a. CALOPSITTA NOVAE-HOLLANDIAE *b.* TRICHOGLOSSUS VERSICOLOR
c. TRICHOGLOSSUS PORPHYROCEPHALUS

PLATE XL.

TRICHOGLOSSUS NOVÆ HOLLANDIÆ. (*Gmel.*)

BLUE-BILLED LORIKEET. GENUS : TRICHOGLOSSUS.

THIS is surely the Brobdignagian king of the *Trichoglossi*. It is a noble bird, gorgeously apparelled, and so like *Trichoglossus rubritorquis* that it is evidently a large, strong, and beautiful evolution of that species; and a lovely contrast to the sombre foliage among which it flits with lightning rapidity. The close connection is singular from the fact that while the *Rubritorquis* is a stationary example of the *Avifauna* of the far North, and is confined to a restricted locality, having only one common meeting ground with its near ally at Cape York, the *Novæ Hollandiæ* is extensively dispersed over the whole of the eastern and south-eastern face of the continent as far as South Australia, and even crosses to Tasmania, though its visits to that island are irregular. In all other respects this Lorikeet so closely resembles the red-coloured Lorikeet that a description is not necessary. The female is slightly smaller, and the scales on the breast are more defined than in the male. Egg, roundish oval, white. Length, thirteen lines and a-half; breadth, ten lines and a-half.

Head, cheeks, throat, royal blue, with a lighter stripe down each feather; breast, scales of red and yellow, with faint black marking; abdomen, deep royal blue in centre, blotched on each side with red and yellow; vent, green with yellow blotches; under tail surfaces, canary yellow at base, becoming golden green at tips; all the upper surfaces green, blotched at the base of the neck with scarlet and yellow; wings, dark green on their outer webs, inner webs, black, crossed by a broad oblique band of bright yellow; tail, green above, passing into blue at the tips of the two central feathers; under tail coverts, rich yellow, with an oblong patch of green at the extremity of each feather. Length, about fourteen inches.

Habitats : Gulf of Carpentaria, Cape York, Rockingham Bay, Port Denison, Wide Bay District, Dawson River, G.B., Richmond and Clarence River Districts (New South Wales), Interior, Victoria, South Australia, and Tasmania.

TRICHOGLOSSUS RUBRITORQUIS. (*Vig. and Horsf.*).

RED-COLOURED LORIKEET. GENUS : TRICHOGLOSSUS.

IT is the natural bias of the human mind to judge of the whole by individual members, and if those members are numerous enough to develop a variety, and yet do not show any such inclination, the positive element seems to be reasonably substantiated, and a hypothesis deduced. We have hitherto regarded the *Trichoglossus* as a tiny dainty bird, whose fitting home is among the aromatic flower cups. The surprise is greater, then, to find that there are giants among the tribe of liliputians, and the *Trichoglossus rubritorquis* is a strong evidence of the fact, for it is quite as large as the Rosella, and as such should seem to have no kinship with the consumers of ambrosial fare such as the nectar of flowers.

In its habits and economy the Red-Coloured Lorikeet resembles its small congeners so closely that a description of the one fits equally well the other, with the trifling difference that it is more restrictive in its exclusive partiality for the flowers of the eucalypts. The tea tree (*melaleuca*), which provides an abundant harvest for the *Trichoglossus versicolor* and others, is totally ignored by this species.

Gilbert remarks that "this species is abundant in all parts of the Coburg Peninsula and the adjacent islands, and is an especial favourite with the natives, who carefully preserve the heads of all they kill, for the purpose of ornamenting their persons by slinging them to the arm a little above the elbow. It is generally seen in large flocks, feeding on the summits of the loftiest trees. Its flight is rapid in the extreme. Like the other *Trichoglossi*, its food consists of honey and the buds of flowers."

Incubation lasts from September to January, when two eggs are deposited in the holes of the largest eucalypts.

The female is a shabby, blotched reflection of her mate ; all the markings are less distinctly defined, and the collar on the neck is wanting ; red and yellow about the ear coverts and throat ; under wing coverts, red ; primaries, brown ; secondaries, pale yellow ; tertiaries, brown in regular bands ; bill, red ; tarsi, brown ; irides, red.

Head and cheeks, royal blue, which colour appears again, though less brilliantly, below the orange-red collar on the back of the neck and breast ; throat and abdomen, deep olive green ; vent, greenish yellow ; blue on back, splashed with orange ; rest of upper surfaces, bright green ; spines and inner webs of wings and tail, black ; basal half of inner webs of primaries, yellow ; bill, white ; feet, black ; irides, red.

Habitats : Derby (North-West Australia), Port Darwin and Port Essington, Cape York, Queensland.



G. J. BROINOWSKI. FECIT

a TRICHOGLOSSUS MULTICOLOR
Blue-bellied Lorikeet. (Wagl.)

b TRICHOGLOSSUS RUBRITORQUIS
Red-collared Lorikeet. (V&H)

PLATE XLI.

TRICHOGLOSSUS CHLOROLEPIDOTUS. (*Kuhl*).

SCALY-BREASTED LORIKEET. GENUS: TRICHOGLOSSUS.

THIS rather remarkable species inhabits the whole of the eastern and south-eastern portion of the Continent, but it is not so numerous, nor so generally distributed, as others. The brushes near the coast, which are diversified here and there by enormous gum trees, are its favourite locality; there it gathers such quantities of honey from the freshly-opened gum blossoms that a large teaspoonful of honey may be collected from a newly-shot specimen when it is suspended. (*Gould*.)

Like others of the family, the Scaly-Breasted makes its nest in the highest eucalypts, and lays two eggs during the breeding season, which extends from September to January; and, like the rest, it is a very noisy bird. What with their shrill cries of delight, and their piercing ones of anger when they quarrel together over a honey-cup, a flock will keep up such a deafening roar that a gun may be fired among them without causing more than a temporary disturbance: they are back again at their absorbing pursuit before very long, creeping and twining along branches, or hanging to the blossoms in a way most charming.

As a genus, these birds associate very happily together, and the different varieties may be seen at sunrise in the morning wending their way in immense flocks across the sky till they come to the eucalyptus blossoms, when they make a rapid circular sweep and settle in thousands about the flower heads, as many as four of one species being found on one branch.

The sexes are not to be outwardly distinguished from each other.

All the upper surfaces and tail are rich grass green, a few feathers at the back of the neck a bright yellow fringed with vivid green, causing a lovely scale-like effect in the waving lines of yellow or green; under wing coverts, bright red; base of primaries and secondaries, faded red; tertiaries, black; under tail coverts, bright pale green; under tail feathers, olivaceous yellow; bill, blood red, inclining to yellow at the tip; irides, in some scarlet with a buff ring round the pupil, in others yellow; feet, dark grey. (*Gould*.)

Habitats: Rockingham Bay, Port Denison, Wide Bay District, Dawson River, Richmond and Clarence River Districts (New South Wales), Interior, Victoria, and South Australia. (*Ramsay*.)

TRICHOGLOSSUS CONCINNUS. (*Shaw*.)

MUSK LORIKEET. GENUS: TRICHOGLOSSUS.

THE Musk Lorikeet is to be found in the same localities as the previous variety, *Trichoglossus chlorolepidotus*; but extends its area a little by passing from the mainland across to Tasmania, where it is recognised by the name, "Musk," from the strong odour it emits. It is stationary in its habits on the continent; though there is reason to doubt this quality in the southern portions of Tasmania. It lives among the gum trees, where it finds a never-failing supply of honey, as one species or another is in flower all the year round.

This Lorikeet is noisier, if possible, than any of its congeners, and keeps up a perpetual din wherever it may be. It is of so confiding a disposition, that it will take up a position on a branch, and refuse to leave on any threat short of violence. Though associated in large flocks, they are apparently mated in pairs, which fly together, and settle side by side when the heat of the sun prompts them to shelter themselves from it.

They nest in the hollows of tall gum trees ; the female laying two dirty white eggs of a rounded form and somewhat coarse shell ; length, eleven lines and three-quarters ; breadth, nine lines.

The male has the forehead, top of head, and ear coverts, deep red ; crown and nape, verditer green ; back and shoulders, dull yellowish brown ; lower surfaces of back, tail coverts, and tail, wing coverts and outer webs of primaries, secondaries, and tertiaries, brilliant green ; rest of primaries, secondaries, and tertiaries, black ; inner web of tail, red at base, passing into yellow tipped with grass green ; cheeks and throat, verditer green ; under surfaces, bright green, with dull yellow marking below wing ; beak, black at base, yellow at tip ; irides, pale straw ; feet, dirty brown.

The female has very little red about the head, no mixture of yellow and brown on her back ; under surfaces, more delicate green ; inner webs of tail, orange-red at base, fading into greenish yellow ; irides, yellow.

Habitats : Rockingham Bay, Port Denison, Wide Bay District, Dawson River, Richmond and Clarence River Districts (New South Wales), Interior, Victoria, South Australia, and Tasmania. (*Ramsay.*)

TRICHOGLOSSUS PUSILLUS. (*Vig.*)

THE JERRY GANG, OR LITTLE LORIKEET. GENUS : TRICHOGLOSSUS.

HERE we have a tiny vivacious bird, that looks as though its sole mission in life were to dive into the honey-cups and wild blossoms, and drink long draughts of sweetest nectar. Allowing for its greater daintiness we find it assimilates so closely to others already described, that to enumerate its habits and manners would be to repeat ourselves. It is dispersed over the same localities as *Trichoglossus concinnus*, but more sparingly in Tasmania. On the continent it frequents the same districts at the same seasons of the year, and is more often seen in company with that species than alone, frequently occupying the same tree and the same branch. The tongue of these Lorikeets is perfectly fitted for extracting honey ; and the bill is strong enough to crack pods, and extract seeds when that food is not obtainable. Length, five inches and a-half to six inches.

On the Upper Hunter, Gould found a nest in a hole of a small branch of a tall eucalyptus, containing four eggs, white in colour, and oval in shape, nine lines and a-half long by seven lines and a-half broad. The month being October, it is reasonable to deduce that the breeding season extends from September to December. Egg : Roundish and white ; length, nine lines and a-quarter ; breadth, seven lines and a-quarter.

The female is smaller in size, and is altogether a faded reproduction of the male.

Forehead, cheeks, and throat, rich red ; a russet ring from beneath the shoulders and across the back divides the vivid green head from the brownish green back. All the upper and under surfaces are shades of bright lustrous green ; inner webs of primaries, secondaries, and tertiaries, black, margined externally with grass green ; inner webs of lateral tail feathers, red at base, fading into yellowish green at the tip ; irides, bright yellow ; bill and feet, black. (*Gould, partim.*)

Habitats : Rockingham Bay, Port Denison, Wide Bay District, Dawson River, Richmond and Clarence River Districts (New South Wales), Interior, Victoria, South Australia, and Tasmania. (*Ramsay.*)



G. J. BRODOWSKI. FECIT

a. TRICHOGLOSSUS PUSILLUS.
Little Lorikeet.

b. TRICHOGLOSSUS CONCINNUS.
Musk Lorikeet.

c. TRICHOGLOSSUS CHLOROLEPIDOTUS
Scaly-Breasted Lorikeet.

PLATE XLII.

GENUS EUPHEMA. (*Wagler.*)

THE seven species into which this genus is subdivided are exclusively Australian, and, so far, appear to be confined to the temperate zone, on the mainland, between the Wide Bay District of Queensland and Western Australia. Within this area they are abundantly distributed, and two of them—*Euphema chrysostoma* and *Euphema aurantia*—being of migratory tendencies, pass over to the adjacent island of Tasmania. They do not possess any imitative powers, but their beautiful plumage fully compensates for the lack of this attractive quality. They have long and strong tarsi adapted to running swiftly over the ground, and the flight is powerful and well sustained.

EUPHEMA AURANTIA. (*Gould.*)

ORANGE-BELLIED GRASS PARRAKEET. GENUS: EUPHEMA.

THE bird under present notice, though sufficiently like its congener, *Euphema elegans*, to be mistaken for a variety of the same species, is by no means so beautiful, as it lacks in a great degree the conspicuous blue forehead; while the upper surfaces are green instead of olive brown, and there is a well-defined patch of orange between the thighs—whence the name *aurantia*.

Like the Blue-Banded, it is migratory in its habits, spending its summers in Tasmania and the islands in Bass' Straits, and is seldom met with on the mainland, except during winter, and then only in a few favoured localities, such as Port Adelaide and Holdfast Bay. In New South Wales it is seldom met with, and never penetrates further north than to the Richmond District, which touches the south coast border of Queensland. Gould's personal experiences of this little bird are interesting enough to be transcribed *verbatim*: "I observed it sparingly dispersed in the neighbourhood of Hobart Town and New Norfolk, but found it in far greater abundance on the Actæon Islands, at the entrance of D'Entrecasteaux Channel. These small and uninhabited islands are covered with grasses and scrub, intermingled with a species of Barilla, nearly allied to *Atriplex halimus* (a Salt bush); and almost the only land bird that enlivens these solitary spots is the present beautiful Parrakeet. I frequently flushed small flocks from among the grass, when they almost immediately alighted upon the Barilla bushes around me, their sparkling orange bellies forming a striking contrast with the green of the other parts of their plumage and the silvery foliage of the plant upon which they rested. I made many unsuccessful attempts to discover their breeding-places; as, however, these islands are destitute of large trees, I am induced to believe that they lay eggs in holes on the ground, or among the stones on the shore. On visiting South Australia in winter, I there found it equally abundant on the flat marshy grounds bordering the coast, especially between the Port of Adelaide and Holdfast Bay."

It is more than likely that these birds go elsewhere to breed, as they are strong-winged and can make long flights without taking rest. Incubation lasts from September to January, but no authentic knowledge is to hand as to the number of eggs they lay. Probably in this respect, as in most others, they adhere to the habits of other *Euphemæ*. The egg is white, with a very fine textured shell; length, ten lines and three-quarters; breadth, nine lines.

The note uttered by the *Aurantia* is a great contrast to the musical whistle of *Euphema elegans*; it resembles more than anything else a sharp snapping sound.

In common with all its congeners, it possesses rather long tarsi, and runs swiftly over the ground in search of its natural food—grass seeds. During the breeding season it is partly insectivorous in its habits. But there is no doubt, as cultivation increases, and circumstances place them in its way, that it will adapt itself to new forms of food in the shape of cereals. Already it has become the pest of farmers in sowing time and harvest, and the fact that it does a certain amount of good in destroying noxious grubs does not compensate for its depredations on the newly-sown grain fields to the eye of the agriculturalist; he wages such fierce war upon the tiny bird that there is every probability of the race becoming prematurely extinct.

The female is smaller than the male, and the distinctive orange spot is fainter. The young, like those of the *Platyceerci*, have delicate yellow bill and nostrils, and the band on the head is less conspicuous. Length of adult male, about eight inches and a-half.

Forehead, blue, margined with a faint band of metallic blue; crown of head and all the upper surfaces, deep grass green; shoulders, secondaries, and outer edge of primaries, deep indigo blue; lores, cheeks, and breast, yellowish green, passing into deep orange on the abdomen and thighs; two centre tail feathers, green; next, on each side, blackish brown on their inner, and green on their outer webs, and largely tipped with bright yellow; irides, very dark brown; bill, dark brown, becoming lighter on the under side; tarsi, dull brown.

Habitats: Richmond and Clarence River District (New South Wales), Interior, Victoria, South Australia, and Tasmania. (*Ramsay.*)

EUPHEMA CHRYSOSTOMA. (*Kuhl.*)

BLUE-BANDED, or BLUE-BARRED GRASS PARRAKEET. GENUS: EUPHEMA.

IN the genesis of species this small bird was evidently the prototype of *Ephema elegans* and *Ephema pulchella*, and stands now as a faint indication of future possibilities by comparison with their perfections, each having advanced a step in the evolution of colour and harmonious agreement from the original stock. It is not a little interesting to note how, after the superlative degree of beauty has been reached in *Euphema elegans*, the law of compensation steps in to heighten progress, if possible, in one direction, and to check it into a falling off in another.

In *Euphema elegans* we see a perfectly developed variety of what *Euphema chrysostoma* might have been under similar favourable circumstances. In plumage, contour, and expression, it conveys a vitalised idea of full calm maturity. In *Euphema pulchella* we find a far more brilliant bird, but produced at the cost of perfect concordance; there is a nervous, irritable vivacity expressed in every attitude that warns us that this law of compensation holds good throughout created life.

This bird is migratory in its habits, and takes up its residence in the summer in Tasmania, arriving in September, and leaving again in February or March. While there it affects open and thinly timbered localities, such as are favourable for the growth of various grasses, upon whose seeds it mostly subsists. It has been particularly noticed by Gould about Bruni Island, Sandy Bay, New Norfolk, Spring Hill in the Interior, the banks of the Tamar, and on Flinder's Island in Bass' Straits. He considers it one of the most interesting of the *Psittacidae*, "for whether perched on the small dead branches of a low bush, or resting upon the stronger grasses, there is grace and elegance in all its actions. It runs over the ground and threads its way among the grasses with the greatest facility, and the little flocks are usually so intent upon gathering the seeds, as to admit of your walking close up to them before they will rise; the whole will then get up simultaneously, uttering a feeble cry, and settling again at a short distance, or flying off to some thickly-foliaged tree, where they sit for a time and again descend to the ground."

T. A. Forbes Leith gives his experience of them thus: "Is met with in many parts of Victoria, from the Werribee to the Loddon, in the east and west of the colony. . . . The female is a dull brownish green on the upper surfaces; otherwise she is like the male, but less brilliant, resembling very much the Elegant Grass Parakeet. . . . These Parakeets live much in the grass, often in pairs only together. I shot one on Keilor's Plains some years ago, and I daresay they may be met with on any grass flats. In dry summers they make for the neighbourhood of creeks, and I have seen them on the Werribee, and shot a female there once."

The breeding season is at its height in October and November, when the eggs are usually deposited in the holes of the eucalypts, but sometimes in the hollow trunks of fallen trees. In common with members of the same genus, the male assists in the task of incubation. The eggs vary in number from three to five, and are round and white. Length, ten lines; breadth, eight lines and a-half.

It is more than probable that members of the same flock vary considerably in the tone of their plumage, as some writers speak of the Blue Banded Parrakeet as surpassing in loveliness the Turquoise or *Euphema pulchella*. The accompanying plate is painted from a specimen in the Sydney Museum, by which it will be seen that there is no comparison between it and its splendid congener.

Forehead, band of indigo blue, outlined by faint line of light metallic blue; head, neck, back, upper tail coverts, throat, chest, and flanks, olivaceous green, with yellow tinge round the eye; breast, lighter shade, slightly tinged with blue, and fading into sickly yellow on the vent and under-tail coverts; shoulders, lazuline blue, deepening into ultramarine on the primaries and secondaries, which are tipped with black; four middle tail feathers, greenish blue; the basal portion of the remainder, beautiful blue on their outer edges, and largely tipped with fine yellow; irides, bill, and tarsi, brown.

Total length, about seven inches and three-quarters.

Habitats: New South Wales, Victoria, South Australia and Tasmania.

EUPHEMA BOURKII. (*Gould.*)

BOURKE'S PARRAKEET. GENUS: EUPHEMA.

IN this charming little bird we welcome a delightful change in the colour of the plumage from all existing *Euphemæ* and *Psephoti*; the eternal green vesture (of which Forbes Leith writes: "Strange to say, notwithstanding the number of green Parrakeets to be found in different parts of the world, I never saw two species with the upper surfaces having the same shade of green; this is one of those exquisitely beautiful arrangements in nature where, when necessary, the colours of the fauna will blend or contrast with the flora of the earth.") is exchanged for one of warm porphyry on the under surfaces, and carries with it a sense of relief that not the most exquisite shades of green could pale.

Apart from its appearance, Bourke's Parrakeet (called by Gould after Governor Bourke, who held the reins of vice-royalty at the time when Major Sir T. L. Mitchell discovered the first specimen on the banks of the Bogan during one of his expeditions into the interior of New South Wales), is closely allied in all its habits to the rest of its congeners, except that it is not migratory.

In the crescentic form of the markings on the back, there is to be traced an approach to the style of colouring observable in the *Melopsittacus undulatus*.

Though distributed over the three best known colonies, our knowledge of this dainty little bird is restricted from the fact that it is nowhere common. It thrives in captivity, and through this source we obtain the little information we have of it. A certain Mr. Groom, of Camden Town, London, once possessed a pair, and

reports: "The egg of the *Bourkei* is about the size of the Turquoise's egg, of round shape. The male bird assists in the incubation. Time, about seventeen days. Nest in wood log hollowed out for them, as they do not appear to have the power to cut away the wood like most Parrakeets do."

Greene defines the difference between the sexes thus: "The female resembles her mate, but is without the blue frontlet, which serves as a differentiating mark between the sexes; the young resemble their mother."

Head, brownish grey, faintly tipped with blue on the forehead; cheeks, warm white margined with brown and tinged with salmon red; breast, warm salmon outlined with brown, the salmon increasing in depth on the abdomen; primaries and secondaries, blue; tertiaries, paler blue, margined with white; under wing, two upper tail coverts, bright pale blue; six middle tail feathers, deep brown, the external webs tinged with blue; the three outer ones on each side, tinged with brown at the base, with the external webs blue and the tips white; bill, dark horn colour; tarsi, brown.

Habitats: New South Wales, Interior, Victoria, and South Australia.

EUPHEMA PETROPHILA. (*Gould.*)

ROCK PARRAKEET. GENUS: EUPHEMA.

AT present this is a little-known bird, having escaped close observation, partly from the accident of its inhabiting a country still unexplored by the naturalist, and partly from its resemblance to *Euphema elegans*, between which and *Euphema chrysostoma* it might serve as an intermediate link in the chain of relationship were they all found to inhabit the same locality. However, the fact that the Rock Parrakeet has, so far, only been found about the coast lines of Western and South Australia proves nothing against the theory of an intermediate link, as it would be quite possible for an aberrant flock to settle among new surroundings and develop characteristics in keeping with them, but quite opposed to the hereditary habits of their genus.

The other six species are terrestrial to a large extent in the matter of feeding, and resort to trees for breeding purposes, but the *Euphema petrophila*, as its name implies, affects a totally different manner of life. Its principal habitat appears to be the western coast of West Australia, where it is found in great numbers on the islands off the mouth of the Swan River, Rottenest, and others. "Here," says Gilbert, "it breeds in the holes of the most precipitous cliffs, choosing in preference those facing the water and most difficult of access, and hence it required no slight degree of exertion to procure examples of the eggs, which, according to the testimony of the natives, are white, and seven or eight in number. Its flight is extremely rapid, and at times it mounts to a great height in the air."

The sexes do not vary in colour, and have forehead and lores, deep indigo blue, tipped with metallic blue; upper and under surfaces, dark olivaceous green, passing into yellow on the vent and under tail coverts; two centre tail feathers, bluish green; the remainder of the feathers, brown at the base on the inner webs, green at the base on the outer webs, and largely tipped with bright yellow; wing coverts, metallic blue; primaries, deep indigo blue on outer webs, and brownish black on inner webs; irides, very dark brown; upper mandible, dark reddish brown; sides of the under mandible, light yellow; the tip, bluish grey; tarsi, dark brownish grey.

Total length: Eight inches.

Habitats: West and South-West Australia.



a EUPHOMA AURANTIA
Orange-winged Parakeet

c EUPHOMA PETROPHILA
Rock Parakeet

b EUPHOMA CHALCOPHILA
Blue-winged Parakeet

d EUPHOMA BOJRII
Bojri's Parakeet

PLATE XLIII.

EUPHEMA PULCHELLA. (*Gould*).

CHESNUT-SHOULDERED GRASS PARRAKEET. GENUS: EUPHEMA.

AFTER the Elegant Parrakeet this is the most widely-distributed species of all the genus, and extends its habitats from the Wide Bay District to South Australia. Of a migratory disposition, the Turquoise penetrates into the plains of the Interior, though its preference is for the Coast District. It is commonly to be met with in New South Wales, but in Victoria it is very scarce, a few going in the spring to South Gippsland and the places adjacent, and are there never seen in greater numbers than three or four together—more generally in pairs. Unlike the Elegant Parrakeet, this species does not consort together in large flocks, but, at most, in companies of six or eight individuals, which are probably a family party, consisting of the old pair and their offspring of the year, for in her natural state the female Turquoise has two broods in the season of from three to five each, but in captivity and domesticated she is almost as indefatigable in rearing broods as the Cockatiel, producing from three to five in the year of from four to eight eggs each time. Parents and offspring remain together harmoniously associated until the following Spring, when instinct impels the young ones to set up housekeeping on their own account.

The Turquoise has a most amiable, docile disposition on the whole, though there are occasional instances of contankerous exceptions. They are apt to be listless and uninteresting except in the breeding season, but directly spring comes to “turn their thoughts to love,” they become very bright and amusing. The male is at this period a most amorous lover and devoted husband; his attentions are touching in the extreme; he is never tired of piping a sweet love-song to his mate to while away the tedium of sitting.

As a whole they are very hardy, and have a wonderful power of adapting themselves to changing phases of climate, adverse conditions, or circumstances. Their food consists solely of the seeds of grasses and the smaller annuals; they have a greater partiality for stony ridges than for rich alluvial flats. When suddenly alarmed, they fly a short distance among the trees and perch upon some dead limb, remaining there till driven to the ground again by hunger.

When the breeding season comes round, and it is necessary to find a spot to deposit the eggs, these birds seek out a hollow in a tree, and the eggs are laid without any attempt at nest-building. Incubation lasts about eighteen days, but it is difficult to ascertain the exact time, as the female is apt to resent any interference, and if much molested will leave the nest. Egg, white; length, eleven lines; breadth, nine lines.

The male Turquoise is a most beautiful bird, in fact one of the loveliest of our Parrakeets. The shades of blue on the head and wings are exquisite in a full-plumaged bird; the eye is large and dark; the forehead, lazuline blue; the cheeks and lores, azure; back of head, back, upper tail coverts, and two centre tail feathers, olive green; head, shoulders, and part of wing, a most beautiful turquoise blue; a bright spot of chesnut red at the insertion of the wings; primaries and secondaries, deep blue on their outer webs, and blackish brown on the inner; under surfaces and under tail coverts, bright yellow; two outer tail feathers, yellow; two next, green at base, and yellow at tips; bill and feet, dark brown.

Size; Eight inches, or the same as *Euphema petrophila*.

The female resembles her mate in general appearance, except that she is much less brilliant, and lacks the red shoulder mark; while the blue head and ultramarine wings are exchanged for a bright blue colour; the breast is generally green, or yellowish green, in faded tints. The male specimen in the Sydney Museum, from which this plate is coloured, has, however, all the under-surfaces yellow blotched with red, but I am inclined to think this is an accidental variety, as the descriptions given by Gould, Greene, and Forbes Leith, gathered from many sources, coincide, and they do not seem to have noticed this dull red blotching.

The young ones are greyish green, without any of the distinctive marking found in the mature bird. They soon moult, however, and cannot be distinguished from their parents in three or four months from the time of leaving their nests.

Habitats; Wide Bay District (Queensland); Richmond and Clarence River Districts (New South Wales); Interior, Victoria, and South Australia. (*Ramsay.*)

EUPHEMA ELEGANS.

ELEGANT GRASS PARRAKEET. GENUS: EUPHEMA.

THE Elegant Grass Parrakeet has been rightly named, for, without being brilliant, it is perfect in colouring and proportions. Closely resembling its predecessor, the Blue-Banded Parrakeet, it yet differs from it in the higher accentuation of colours, the fuller development of all its parts—details in which we trace that evolution theory which is destined to play an important share in the downfall of conservatism as applied by man to all ranks of creation.

The proper home of the Elegant Grass is Western Australia, but, being of migratory habits, it is found extensively dispersed all over the continent as far north as Port Darwin; but for some unexplained reason, it does not, like the Blue-Banded, cross the narrow straits to Tasmania. This is the more singular because it appears to prefer the barren sandy coastline, only occasionally going far inland. Gould says of it: "Flocks were constantly rising before me while travelling the salt marshes, which stretch along the coast from Holdfast Bay to the Port of Adelaide; they were feeding upon the seeds of grasses and various other plants, which were there abundant, in the middle of the day, and when disturbed, they retreated to the thick banksias that grow on the sandy edges in the immediate neighbourhood, and in such numbers that I have seen those trees literally covered with them, intermingled with the Orange-Breasted species (*Euphema aurantia*), which, however, was far less numerous. When they rise they spread out and display their beautiful yellow tail feathers to the greatest advantage."

In Western Australia Gilbert observed that "the Elegant Grass Parrakeet inhabits every variety of situation, but particularly where there is an abundance of grass, the seeds of which are its favourite food; it may be generally observed in small families, but at Kojenap, where there are several pools, and no water for many miles round, I saw these birds in myriads; but, although I shot a great many, they were nearly all young birds. Its flight is rapid and even, and frequently at considerable altitudes."

The breeding season is during September and October; the nest a hollow in a tree, where are laid from four to seven eggs, white in colour, eleven lines long by nine lines broad.

Of migratory and gregarious habits, these birds live almost entirely on grass seeds, and require such a quantity of fluid to digest this dry food that they are always found in the neighbourhood of some waterhole or river.

The Elegant Parrakeet has a gentle disposition, which becomes quite sprightly during the days of his courtship, when he sings and dances before his mate in a fashion that may be very attractive to her, but which to the human beholder is almost ridiculous.

The sexes differ very little in appearance. The female is neither so bright nor so large as the male. She has less of the blue markings on her head, the golden sheen of the under surfaces is, in her case, washed with a greenish tinge, and the vent feathers pale yellow.

The young of all three varieties—Blue-Bellied, Orange-Breasted, and Elegant—are very much alike, though the first is the smallest of them, however, they moult between six and seven months old, and adopt the plumage of their different parents according to sex distinctions. Length of adult bird, eight inches and a-half.

A band of deep indigo blue, tipped with light metallic blue, forms the forehead; the same brilliant metallic blue on the shoulders is brought into close juxtaposition with an intense sapphire blue, deepening to indigo, and colouring the primaries, secondaries, and tertiaries; the head and upper surfaces, olive green; tail coverts, golden olive green; throat and chest, greenish yellow, passing into bright yellow on the abdomen and under tail coverts; the two centre tail feathers, vivid metallic blue; the remainder blue at the base and largely tipped with yellow; irides, very dark brown; bill, dark brown, lighter on the under side; legs and feet, dull brown.

Habitats: Wide Bay District, Richmond and Clarence River District (New South Wales), Interior, Victoria and South Australia, Western and South-Western Australia. (*Ramsay.*)

EUPHEMA SPLENDIDA. (*Gould.*)

SPLENDID PARRAKEET. GENUS: EUPHEMA.

WITHOUT doubt if the bird nomenclature could be revised, and names bestowed according to the merits of one bird in comparison with another of the same species, we should not find the eternal fitness of things so often disturbed in this department by hasty conclusions; even allowing the truth of the proverb “every eye makes its own beauty,” it is hard to divine why this particular grass Parrakeet should be designated by so fine a word as *splendida*, when most of its congeners can lay claim to greater beauty. The only reason to be assigned is that naturalists became acquainted with the birds of a genus by chance, frequently in an inverted order, and for want of more knowledge bestowed upon them names quite out of proportion to their comparative merit.

The Splendid Parrakeet resembles *Euphema pulchella* in the colouring of its upper surfaces, and might be mistaken for one as it runs lightly through the tall coarse grasses. But when alarmed, it rises with a “whirr” that reminds one of the Partridge, and flies to the nearest casuarina, banksia, or mimosa, revealing as it goes the brilliant red breast that is so distinctive a mark.

The first specimen procured by Gould was sent him in 1840, from the Swan River; a second came from Moore’s River; and Captain Sturt obtained one during one of his journeys into the interior of South Australia; others again were killed in the Murray scrub near the north-west bend of that river. Scattered testimony such as this proves that the original habitats of *Euphema splendida* were South and Western Australia, the vast sparsely timbered plains of the latter colony affording secure asylum for a number of beautiful Parrakeets (many of which are extremely local in their distribution, owing to the instability of the seasons), whose natural food is the seed of the kangaroo grass (*Anthisteria avenacea*). (*Gould.*)

The movements of this bird are regulated principally by the supply of food; if the grass happens to be good in one district the grass Parrakeets, with the Splendid at their head, abound; but should this fail in another from natural causes or fire, the birds will occur rarely or not at all, having been forced by stress of circumstances to seek food elsewhere. It extends its range as far as New South Wales, but is never plentiful.

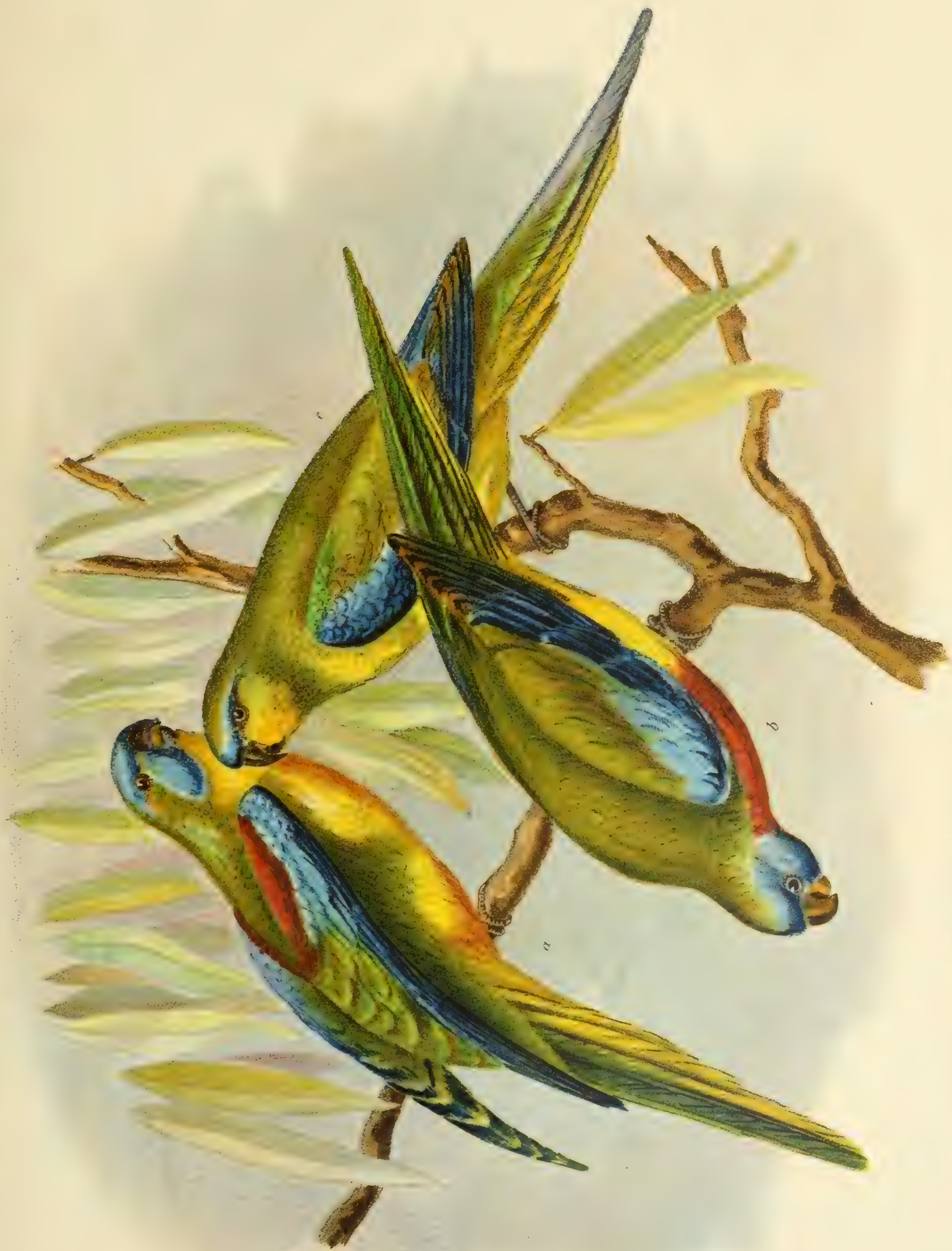
In point of size the Splendid Parrakeet is rather smaller than the Turquoise, but is equally slim and graceful. In disposition and hardiness it is much the same. Total length, eight inches.

The female is smaller and paler; the wing coverts both above and beneath are a pale lazuline blue, and the breast green instead of red.

The nest is made in the hollow of a bough or tree; here the female lays three or four white eggs on the soft dead wood, hatching them in about eighteen days. As soon as the breeding season is over, the birds all retire into the far interior, to re-appear on and near the southern coast with the spring, there to remain till their young ones are able to accompany them on their return journey to the beloved fastnesses.

Forehead, cheeks, and neck, deep blue, touched with metallic blue; all the upper surfaces grass green; upper wing coverts, indigo blue; primaries and secondaries, black; the first three or four primaries margined with green; two centre tail feathers, green; the remaining one black on the internal webs, green on the external, and largely tipped with yellow, which increases as the feathers recede from the centre; breast, red; under surfaces, yellow, passing into green on the sides of the chest and flanks. (*Gould.*)

Habitats: Western Australia, South Australia, Interior, New South Wales.



♂ EUPHEMA SPLENDIDA
Splendid Parakeet

♀ EUPHEMA ELEGANS.
Elegant Grass Parakeet

♂ EUPHEMA PULCHRELLA
Chestnut-Shouldered Grass Parakeet

PLATE XLIV.

GENUS PEZOPORUS.

THIS is a purely terrestrial bird, of which only two species are known—if the slightly aberrant variety *Geopsittacus occidentalis* is included—otherwise there is but one species, and that is peculiar to the temperate zone of Australasia. It does not talk, but has some habits that ally it to the Quail.

PEZOPORUS FORMOSUS. (*Lath.*)

GROUND PARRAKEET. GENUS: PEZOPORUS.

THE Ground, or Swamp Parrakeet is very generally to be met with all over the eastern and southern continent, also in Bass' Straits and Tasmania. On Flinder's Island, Gould found it breeding on the grassy plains. The species is stationary and is never seen to perch among trees, nor even to take refuge on their branches, from which fact we may conclude that the power of perching has not been given it. The formation of the foot adds to this supposition, as it is intended for running rather than grasping. It runs very rapidly over the ground, without the characteristic waddle of its congeners, and when flushed will rise into the air and fly with a swift zig-zag flight for about one hundred yards, when it pitches again and runs into seclusion. The tail assumes a forked appearance in flight.

This is a veritable recluse, and will never discover itself unless accident reveals it. In this inclination nature has helped the Ground Parrot by giving it a coat that matches in colour the grasses among which it feeds. If danger is near it crouches close to the earth, or runs stealthily through the grasses, and so evades man's eye; but if a pointer is of the company, then the Ground Parrot is doomed, for it emits so strong an odour that pointers will stand to it like any other game. It is excellent eating, being scarcely surpassed by the quail or snipe.

Unlike every other Australian Parrot, this one makes his nest upon the ground, choosing the shelter of a tussock of grass. The nest is hollowed out and lined with soft fine grass. There are laid from two to five or six round white eggs. We are indebted to Mr. E. S. Atkinson for the following: "Three eggs in nest, which was deeply hollowed out of the ground under a button-grass tussock, evenly lined with fine grass, and most carefully concealed. Had not the bird flown from under my horse (who 'nearly put his foot in it'), I should certainly not have found this prize." The nest was taken about the beginning of October. These Parrots were at one time plentiful in and about Carum Carum Swamp, Victoria, but when that morass was reclaimed and civilisation stepped in, they retreated to more distant solitudes.

Another variety of this bird is said to inhabit the North-west, and to be nocturnal in its habits.

As the *Pezoporus formosus* is unique in its habits among Parrots, so it is in appearance. It is a plump, graceful bird, quite horizontal in pose, and standing on slim, long legs, adapted for running. Its coat is entirely dark grass green, all the feathers of the lower part of the breast, abdomen, and tail barred in the centre with alternate yellow and black; tertiaries and spurious wing feathers, green on their outer web, and dark brown on their inner, each of the latter with a triangular spot of pale yellow near the base; back of head and neck, green, with streaks of black; breast, bronze and verditer green; touch of brick red on forehead; under surfaces, greenish yellow and black; upper mandible of beak, long and pointed; under, very short, black at base, tipped with horn colour; tarsi, yellowish brown; irides, black, with ring of yellowish brown. (*Gould.*)

Length: About thirteen inches.

The female cannot be distinguished from the male. The young ones develop the adult plumage at a very early age.

Egg: Very round, of a beautiful pure white colour, slightly polished. Length, twelve lines and three-quarters; breadth, ten lines and three-quarters.

Habitats: Wide Bay District (Queensland), Richmond and Clarence River Districts (New South Wales), Victoria, South Australia, Tasmania, West and South-west Australia. (*Ramsay.*)

PEZOPORUS (GEOPSITTACUS) OCCIDENTALIS. (*Gould.*)

WESTERN GROUND-PARRAKEET. GENUS: PEZOPORUS.

OF this singular bird very little is known. In plumage it closely resembles *Pezoporus formosus*, and might pass as an immature specimen, but there the likeness ends. In every other particular it is so different that Gould decided to consider it the representative of a distinct genus, and called it *Geopsittacus*. When we examine it closely we find that the pose of the body is more inclined to the perpendicular and wanting in the even balance of the Ground Parrot; the tail half the length, and the wings folding under instead of over it; the head is disproportionately large; the nostrils high and round; the tarsi and toes short and delicate; and the nails unusually small, in comparison with those of other Parrakeets; in short, there is the difference between a remarkably graceful bird and a short dumpy one.

Gould was inclined to think it related in a slight degree to the *Strigops*; and now that later information has been obtained, we find his surmise was not altogether incorrect, for Dr. Mueller caught a specimen in the Gawler Ranges, to the westward of the head of Spencer's Gulf, in South Australia, and by observing its habits was able to prove that it is nocturnal, living during the day in the rocks and caves of the ranges, and issuing forth at night in search of food. Apparently it never perches, but moves in a series of jumps, after the fashion of a sparrow; occasionally this is changed for a rapid dashing race up and down the cage. It makes no sound except a low whistle. Its food is grasses and grass seeds. Total length, ten inches.

All the upper surfaces, grass green, each feather crossed by irregular bands of black and greenish yellow; feathers of the crown and nape having a black streak down the centre of each; throat and breast, yellowish green, becoming yellow on the abdomen; wings, brown; the outer edge of primaries and secondaries fringed with a greenish hue, and have an oblique yellow mark near the base; tail, brown, toothed on the edge with yellowish green; under tail coverts, yellow, with narrow irregular lines of blackish brown; nostrils, large bluish grey; eyes, round and full and jet black; feet, flesh colour. (*Gould.*)

Habitats: Victoria and South-Western Australia, West and South-West Australia.



G.J. BRODOWSKI. FECIT.

a. PEZOPORUS FORMOSA
Ground Parakeet.

b. GEOPSITTACUS OCCIDENTALIS.
Western Ground Parakeet.

PLATE XLV.

GENUS STRIGOPS.

IN differentiating the genus *Strigops* I do not think I can do better than use the words of that great authority upon the strange avifauna of New Zealand, Sir Walter Lawry Buller: "In the peculiar form which constitutes the unique member of the genus *Strigops* the bill is broad and powerful; the upper mandible has a peculiar rasp-like character within, while the lower mandible is deeply fluted on its outer surface, with a worn notched process near the extremity. The plumage is soft but compact, the wings apparently well-developed, but useless for purposes of flight, with the quills much curved or bent; the tail long and slightly decurved, the feathers composing it acuminate and sometimes with the tips abraded; the projecting feathers on the cheeks loose, with disunited filaments and shafts much produced; the legs strong and well formed; the tarsi covered with elevated rounded scales; the toes similarly protected in their basal portion, scutellate towards the end; the claws strong, well arched, sharp on their inner edge, and with fine points."

STRIGOPS HABROPTILUS. (*Grey.*)

OWL PARROT, or KAKAPO. GENUS: STRIGOPS.

WE have here one of the most interesting of known birds, and a worthy example of the avifauna of New Zealand, where all forms of animal life are upon Antipodean lines. It is, therefore, a matter of regret that our limited space prevents us giving the many interesting particulars that are known of the bird. For a full and entertaining account we cannot do better than refer our readers to "Buller's Birds of New Zealand," where full justice is done to this peculiar Parrot.

The Kakapo is rightly considered "one of the most wonderful, perhaps, of all winged birds," for it unites in itself so many varied characteristics and qualities that the mere enumeration of them is a considerable work.

The very name *Strigops* indicates the fact that it bears some resemblance to the Owl, a resemblance which is found in the possession of a facial disk, in the soft texture of its plumage, and in its nocturnal habits; in all essentials, however, it is a true Parrot. Although a vegetable eater, the Kakapo closely resembles the nocturnal birds of prey in its habits. The wings, though large and strong, are useless for flight; they are spread out while it is running, apparently for the sake of balance, and are used in the same way to break the force of the bird's fall in descending from a higher to a lower point if suddenly surprised.

This peculiarity is the more surprising when we find that the muscles of the wings are fairly well developed, though much overlaid with fat. The anomaly can only be explained by the two facts that the bird is a ground feeder, with a voracious appetite (it subsists chiefly on the moss that covers the ground and the roots of fallen trees, which must be sought for on foot, and, having little nutritive property, require to be devoured in enormous quantities, so much so that the birds have been found with their crops so distended and heavy that they were scarcely able to move), and that New Zealand possesses no indigenous predatory animals. Thus it may be assumed that the Kakapo has lost the power of flight from *disuse*, and the gradual modification of the laws of nature, which, in this instance, has evolved a species entirely different from its Parrot congener.

The Kakapo was at one time abundant all over the North and South Island; but at the present day it is so circumscribed in its locality that there is danger of its becoming extinct. In the North Island it is rarely met with, except in the Kai-Manawa Ranges, and the Taupo District. Until within very recent years the Kakapo was abundant in the Urewera Country, where the natives were in the habit of hunting it with dogs and torches. They say it is gregarious, and, when they were plentiful enough to congregate in numbers at night, the

noise they made was like distant thunder. The cry of an individual bird is a hoarse croak, varied by a discordant shriek when it is angry or hungry; when heard during the night it resembles very closely the gobble of a turkey. "When quietly feeding," Baron A. von Hügel says, "they indulge in a series of the most perfect porcine squeals and grunts. It is really as like a young pig as anything can be."

Perhaps no better idea of the life of a Kakapo can be given than is found in Mr. Reischek's account of his own observations. He says: "In April, 1884, I found under the root of a red birch in a burrow two young Kakapos, covered with white down. During the same month I found several other young birds of this species. So late in the season as the 12th May Mr. Docherty found a Kakapo's nest, containing a female sitting upon an egg, with a chick just hatched. He kindly pointed out the nest, which I measured. The burrow had an entrance from both sides and two compartments. Both entrances led to the first compartment, the second and deeper chamber being connected with the first by a small burrow of about a foot. The nest was in the outer compartment, and was guarded by very strong rocks, rendering it difficult to open it. The distance from the entrances to the nest was two feet and three feet respectively. The first chamber was twenty-four inches by eighteen inches, and twelve inches high. The nest was formed by a deepening lined by wood dust, ground by the bird as fine as sawdust, and feathers, which the female had evidently plucked from her own breast, which was quite bare. From my observations, I am of opinion that the male bird takes no part in the hatching or rearing of the chicks, as in all cases the female was the sole attendant from first to last. I did not see a male near a breeding burrow, nor did I in any single instance find two grown-up birds in one burrow, though I have seen them in pairs on their nocturnal rambles. Whenever two males meet they fight, the death of the weaker sometimes resulting. The female is much the smaller (probably about three-fourths the weight) and duller in plumage. These bush Kakapos are very common in various parts of the Sound district. . . . I was particularly anxious to observe the manner in which the Kakapos make their tracks; I therefore hid myself on several occasions in close proximity to one of the tracks, and in such a position that I could see every bird as it passed along. It was very amusing to watch these creatures—generally one at a time—coming along the track feeding and giving a passing peck at any root or twig that might be in the way. Thus the tracks are always kept clean; in fact, they very much resemble the native tracks, with the exception that they are rather narrower, being from eight to fourteen inches wide. The Kakapos generally select the tops of spurs for the formation of their tracks. . . . When snow fell they travelled on the surface of the frozen snow, and their tracks were soon plainly visible, though not more than an inch below the level of the surrounding snow. In many places the scrub, which consists of silver pine, akeake, and other alpine vegetation, is so dense that the snow cannot penetrate it. The Kakapos take advantage of this to make their habitations under the snow-covered scrub, where they are both dry and warm. The Kakapos leave their burrows after sunset, and return before daylight. If they cannot reach their own home during the darkness, they will shelter in any burrow which may be unoccupied, as they travel long distances. They consume large quantities of food, which consists of grass, grass seeds, and other alpine vegetation. In July they are in splendid condition, those found having as much as two inches of fat on them. In the spring, when the sun begins to shed its warmth, the Kakapos emerge from their burrows and select some favourable spots in the sunshine, where they crouch down and remain the whole day. In September I selected a suitable day for observing this peculiarity. The snow had disappeared from all the sunny places. I found three birds in different places sitting upon low silver pine scrub. They took no notice of my approach until I had them safely in my hand, when they endeavoured to release themselves by biting and scratching."

Sir George Grey says: "The Kakapo is a very clever, intelligent bird, in fact, singularly so; contracts a strong affection for those who are kind to it; shows its affection by climbing about and rubbing itself against its friend, and is eminently a playful and social bird; indeed, were it not for its dirty habits, it would make a far better pet than any other bird with which I am acquainted; for its manner of showing its attachment by playfulness and fondling is more like that of a dog than a bird."

Food: Vegetable mosses, berries of the tutu (*coraria sarmentosa*), bracken fronds (*pteris aquilina*), insects, twigs of the New Zealand broom (*caemichellia*). In captivity they are omnivorous.

Nidification takes place between February and May, when two or three white eggs are laid, about the

size of a Pullet's; they are pure white, and the shell is minutely granulated, but without any gloss or polish. The average measurement is about two inches long by one inch four lines broad.

The young Kakapo chick is extremely small for the offspring of such a bird, and is covered with thick fluffy down of a creamy white colour; bill and feet white; but before it leaves the nest it assumes the plumage of the adult bird, although the colours are duller, with a less admixture of yellow; the ear coverts are darker, and the facial disk less conspicuous.

A distinct variation in the plumage is observable in specimens procured from different localities, of them all the Alpine Kakapo is the most beautiful. Mr. Reischek writes of it: "The Alpine Kakapo—so called by me, as I have never found this beautiful bird anywhere except on high mountains—is considerably larger and much brighter than the ordinary Kakapo. The young ones are much duller in plumage than their parents. These Alpine birds are rare, but I was fortunate in securing about a dozen of them. Amongst them was a specimen of a beautiful varied plumage; on the top of the head, very light green; back, wing coverts, and tail, yellowish green, with crimson spots; round the bill, crimson; throat, breast, and abdomen, yellow, with crimson spots; bill, bright yellow; legs, silver grey; eyes, dark brown."

General colour of upper surfaces, dark sap green, brighter on the wings and lower part of the back, each feather marked with dark brown and yellow; the under surfaces are a lighter green, with a metallic lustre, and radiating lines of yellow; on the crown and nape each feather is vandyked with brown and outlined with a dirty yellow streak; under tail surfaces, barred with dull brown, green and yellow; also the tertiary wing feathers; irides, black; bill, yellowish white; tarsi, yellowish brown.

The sexes are alike in plumage, though individuals vary a good deal in the brilliancy of their tints and the details of their colouring. Sap green to bright grass green is a safe generalisation, but sometimes the whole of the plumage of the under parts is strongly coloured with lemon yellow.

Total length, two feet four inches.

Habitats: North and South Islands, New Zealand.



STRIGOPS HABROPTILUS (Gray)
Kakapo

C. J. BROINOWSKI. FECIT

CUCULIDÆ.—CUCKOOS.

THE genera of this extensive family are dispersed universally over the face of the globe, and many of the species are remarkable for their parasitic habits. As a family they are more numerous in the old world than in the new. In Asia, Africa, India, and Polynesia they are equally numerous, but while the genera are widely distributed, the species are limited in their range. All the Australian species with the exception of one, the genus *Centropus*, are parasitic, and deposit their eggs in the nests, leaving their young to be hatched and tended by other birds.

PLATE XLVI.

GENUS CENTROPUS. (*Illiger.*)

THE three species that represent this genus in Australia have a harsh and spiny kind of plumage, and one of their hind toes has a lengthened spur-like claw. There is a marked difference in the plumage of the old and young, the former having a prevailing black or blue tone, while the latter are brown.

CENTROPUS PHASIANUS. (*Steph.*)

PHEASANT COUCAL. GENUS: CENTROPUS.

THIS species is the only one of which we have at present any definite knowledge; its two near congeners are so closely allied that it would seem as though the peculiarities of each have arisen rather from the necessities of certain localities than from any inherent distinction. An argument in support of such a theory is the fact, that the Pheasant Coucal from the north of Queensland differs from that from New South Wales, in that the bill is much shorter, more arched, and smaller in size.

The Coucals are commonly to be found in North and North-eastern Australia in such situations as suit their habits. They affect swampy places among the coast brushes, where are tall grasses and dense herbage, among which they run rapidly, and if forced they fly to the lower branches of the trees, ascending higher and higher in a succession of leaps till they get to the top, when they fly off to a neighbouring tree.

In consequence of this genus being non-parasitic in its habits, it becomes necessary for the birds to build nests wherein to deposit their eggs. They select a tuft of grass, and build a large dome-shaped nest of dried grass, formed with two openings, through one of which the head of the female protrudes, through the other the tail. The eggs are from three to five in number, very nearly round, and a dirty white colour, sometimes stained with brown, and having a rather rough surface. Length, one inch four lines; breadth, one inch two lines.

The males are always smaller than the females. The adult sexes are alike in their plumage, having the bill, head, neck, and abdomen black, while the young have the bill horn-colour, and the same parts which are black in the adult, of a deep brown, with a tawny stripe down the centre of each feather.

Adult: Upper surfaces and under, dull black, with glossy black shafts; back, wing coverts, rust brown and black, each feather with a conspicuous tawny shaft; remainder of the wing, rich reddish chesnut, with irregular double bars of black; lower part of the back and upper tail coverts, deep green, freckled with black; tail, dark brown, crossed with green and freckled with rufous and tawny yellow; each feather, except two centre, tipped with white; feet, dull black; irides, black.

Immature bird: Head, nape, throat, and breast, brown, each feather having an ivory spine, and centre of webs ivory; middle of back, rust brown, with concentric markings of black, and ivory spines, this merges into waved lines of ivory, brown, and black on the rump and upper tail coverts; tail, horizontal markings of dark brown and buff; under tail feathers, more black; wing feathers, warm buff, pale brown, and black, deepening on tertiaries, breast, and crown; abdomen, pale straw; thighs and vent feathers finely freckled with the three colours; iridies, red; beak, brown, with black patch; tarsi, black.

Habitats: Cape York, Rockingham Bay, Port Denison, Wide Bay District (Queensland), Richmond and Clarence River Districts (New South Wales). (*Ramsay.*)

GENUS EUDYNAMYS. (*Vigors and Horsfield.*)

(O)NLY one species of this genus is known to inhabit the Australian Continent, though another is indigenous to New Zealand and the Polynesian Islands. The Indian name of Koel has followed the bird here, and it is locally known as the Australian Koel. The whole genus is parasitic, the eggs being usually deposited in the nests of crows, though the lack of a convenient crow's nest is no bar to the Koel placing the cumbering egg in some other nest. The sexes differ in size, the female being the larger, but the colouring of the adult is the same.

Mr. Blyth states that the Indian species so closely allied to this one, ejects from its mouth the seeds of the fruits upon which it feeds.

EUDYNAMYS FLINDERSII. (*Vig. and Hors.*)

AUSTRALIAN KOEL. GENUS: EUDYNAMYS.

THIS is an exceedingly well-proportioned, graceful bird, with very long pinions and a square tail, clad in a blue-black sheeny coat when full-plumaged; but, owing to the fact that the female retains her youthful Cuckoo dress, much confusion of opinion has arisen as to whether the young and adult birds were not distinct species. However, a closer knowledge of them has proved that they are one and the same, therefore Gould retained the synonym *Flindersii* from its prior rank in the order of names, though it was originally applied to the bird in one of the earliest stages of its existence, just as it left the nest in a dress of rufous brown, with dark brown markings.

The Australian Koel is commonly to be found in all the coastal brushes from the Eastern Coast of New South Wales as far as Derby in North-West Australia.

It is probably parasitic like the great majority of its family, but of its habits nothing is known except that it is migratory.

The adult male is entirely of a sheeny blue-black, with that greenish tint on the back which seems a natural condition of the blending of the two other colours; irides, brown; tarsi, black, with grey scales; bill, horn-colour at tip, black at base.

The female is about the same size, but her plumage is entirely different, being purely a Cuckoo; head, black, with brown of under feathers showing through; rest of upper surfaces, brown, speckled with yellowy white; the fan-shaped tail has alternate narrow and broad crescenting markings of brown, yellow, and white; neck, throat, and breast, warm buff, with irregular lines of dark brown; abdomen and thighs, wavy bands of warm white and black lines; under tail surfaces, more white than upper; irides, red; bill, horn at tip, black at base; feet, dark grey.

The young male resembles his mother, except that the markings are more irregular and blotchy. The transformation to the adult plumage is first noticeable on the back of the neck.

Habitats: Derby, North-West Australia; Port Darwin and Port Essington, Gulf of Carpentaria, Cape York, Rockingham Bay, Port Denison, Wide Bay District, Dawson River (Queensland), Richmond and Clarence River Districts (New South Wales), South Coast of New Guinea. (*Ramsay*).



a EUDYNAMIS FLINDERSII
Australis (Korea) (Korea)

b CENTROPUS PHASIANUS
Pheasant (Caucasus) (Steppe)

PLATE XLVII.

GENUS SCYTHROPS. (*Latham.*)

THE only known species of this remarkable bird inhabits Australasia, and is found dispersed over the whole continent, New Guinea, and Tasmania. It is parasitic and migratory in its habits.

SCYTHROPS NOVÆ HOLLANDIÆ. (*Lath.*)

CHANNEL - BILL. GENUS: SCYTHROPS.

FOR a time this unique bird was supposed by some to belong to the Toucans, while others regarded it as a Horn Bill, but a thorough investigation has proved that it is a member of the Cuculidæ.

The Channel-Bill is an unfortunate instance of the unsatisfactoriness of a little general knowledge, which is not comprehensive enough to deduce from it a scheme of the habits and peculiarities of this singular species. We know that it is migratory, as it arrives in New South Wales in October and disappears in January, whither going and whence coming we know not. It is insectivorous, like the other Cuckoos, in its food, but prefers the larger kinds of *phasiniæ* and *coleoptera* to the smaller ones eaten by other species of its family. Occasionally it feeds upon fruits. The changes in its plumage towards maturity are very similar. For the rest we must fall back upon individual testimony.

Latham, in his "General History of Birds," says: "It is chiefly seen in the morning and evening, sometimes in small parties of seven or eight, but more often in pairs. Both on the wing and when perched it makes a loud screaming noise when a hawk or other bird of prey is in sight. In the crop and gizzard the seeds of the red gum and peppermint trees have been found; it is supposed that they are swallowed whole, as the pericarp, or capsule, has been found in the stomach; exuviae of beetles have also been seen, but not in any quantity. The tail, which is nearly the length of the body, is occasionally displayed like a fan, and gives the bird a majestic appearance. The natives appear to know little of its habits or its haunts; they consider its appearance as an indication of blowing weather, and that its frightful scream is through fear. It is not easily tamed, for Mr. White observes that he kept a wounded one alive for two days, during which it would eat nothing, but bit everything that approached it very severely."

The late Mr. Elsey made some notes for Gould on the subject of the Channel-Bill, when he accompanied Mr. Gregory's Expedition. He says: "This bird appeared on the northern side of the ranges. It settled in a tree close to our camp, and for five minutes at a time pumped out its awful notes. Sometimes it was quite indifferent to our presence, but generally it was very shy. I have never seen it on the ground, but always at the tops of large trees. One, shot by Mr. Gregory, and preserved, proved to be an incubating female; it contained several eggs, one nearly matured, and from the state of the oviduct another must have been recently extruded. Its habits seem to indicate that it is parasitic."

Dr. Bennett, of Sydney, wrote in June, 1858, to Gould: "I have much pleasure in telling you that when the young *Scythrops* was introduced into Mr. Dennison's aviary it was placed in a compartment already occupied by a *Dacelo gigas*, and doubtless feeling hungry after its journey, immediately opened its mouth to be fed, and its wants were readily attended to by the *Dacelo*, who, with great kindness, took a piece of meat, and, after sufficiently preparing it by beating it about until it was in a tender and pappy state, placed it carefully in the gaping mouth of the young *Scythrops*; this feeding process continued until the bird was capable of attending

to its own wants, which it now does, feeding in company with the *Dacelo* in the usual manner. When I saw it in the morning it was perched upon the most elevated resting place in the aviary, occasionally raising itself, flapping its wings, and then quietly settling down after the manner of hawks in confinement, and presenting much the appearance of a member of that tribe of birds. It comes down for food every morning, and immediately returns to its elevated perch. Judging of what I saw of this specimen, I should imagine that the bird might be readily tamed, and would bear confinement very well. In the young state it is destitute of the scarlet orbits so conspicuous in the adult."

"An egg taken from the ovarium, after a bird was shot, was of a light stone colour, marked all over, but particularly at the larger end, with irregular blotches of reddish brown, many of which were of a darker hue, and appeared as if beneath the surface of the shell. Length, one inch and eleven-sixteenths; breadth, one inch and a-quarter." (*Gould.*)

The sexes do not vary in plumage, but the female is slightly smaller than the male.

Adult plumage: Head, throat, nape, and upper part of breast, a mixture of drab and buff, the buff predominating about the cheeks and forehead; back, dull brown; shoulders, wing coverts, and tertiaries, brown, each feather having a triangular buff point varying in size and shade; secondaries, brown, darker at tips; tail, brown, and upper surface, each feather having a broad band of rusty black towards the tip, and then tipped with ivory; under wing coverts, freckled warm buff, and greyish brown; lower part of breast and abdomen, greyish yellow, with pale wavy markings that grow more decided on the vent; under tail surfaces, transversely barred with grey, that becomes broader and rusty black towards the tip; beak, horn colour; irides, red; feet, horn colour.

Habitats: Derby, N.W.A.; Port Darwin and Port Essington, Gulf of Carpentaria, Cape York, Rockingham Bay, Port Dennison, Wide Bay District; Richmond and Clarence River District (New South Wales); Interior, Victoria, South Australia, Tasmania, South Coast of New Guinea.



SCYTHROPS NOVAE-HOLLANDIAE
Channel-Bill (Lark)

G. J. BRIDGEMAN FECIT

PLATE XLVIII.

GENUS CHRYSOCOCCYX. (*Gould.*)

THIS is a widely-distributed genus, embracing the countries of both old and new worlds below the equator. Members of the family are found in Africa, New Zealand, Java, and Australia. The latter country possesses three varieties, all of which are parasitic and migratory.

CHRYSOCOCCYX LUCIDUS. (*Gould.*)

BRONZE or SHINING CUCKOO. GENUS: CHRYSOCOCCYX.

IT was at one time settled that the *Lamprococcyx* of New Zealand and New South Wales were distinct species of the same genus, and to avoid confusion the distinctive term, *Plagosus*, was given by Gould to the continental bird. However, Buller has successfully proved that the two birds are identical, for he finds the Shining Cuckoo (as it is called in New Zealand) migrates there from the shores of the continent for a few months in each year; therefore, *Lucidus* is the most fitting name to bestow upon the species.

The migratory instincts of this bird induce it in summer to wing its way across the ocean to New Zealand; in winter it retires to the north, where insect food is more abundant. For it is insectivorous in its habits, preying principally upon *hymenoptera*, *coleoptera*, and caterpillars. Its stomach is capacious, membranous, and slightly lined with hair. Its movements in searching for food, though remarkably quick, are characterised by great quietness, the bird leaping from branch to branch in the gentlest way, picking an insect here and there, or prying for others among the leaves and crevices of the bark with a keen scrutiny which nothing escapes. It has a quick, undulating flight, which displays to the fullest advantage the bronze green colouring of the male.

The force of hereditary instinct is never more strongly evidenced than when we find it asserting itself in some immaterial trait that has no effect upon the present, except as a mark of evolution, but clearly points back to the discarded habits of previous races. Among the *Centropi* we found the parasitic custom unknown; each pair made their own dome-shaped nest, and performed the task of rearing their young like any other virtuous birds. The *Eudynamis* cut itself free from all domestic obligations, and left its young to be tended by kindly Crows, thus proving that there is a wide racial gap between the two genera. That gap we may consider bridged over in the chain of evolution by the *Chrysococcyx*; for the Shining Cuckoo, though a true parasite, is usually found to deposit its egg in a dome-shaped nest having a very small entrance. In New South Wales, the *Malurus cyaneus* and the *Geobasileus chysorrhous* are forced to be foster parents. Mr. Bennett, in writing of the *Lucidus*, states that he has found the egg in the nest of *Acanthiza chrysorrhæa*, and that he has seen a nest of this bird with five eggs, that of the Cuckoo being deposited in the middle of the group, so as to insure its receiving the warmth imparted by the sitting bird, and thus less likely to be addled. He also narrates the following anecdote: "A white-shafted Flycatcher (*Rhipidura albiscapa*) was shot at Ryde, near Sydney, in the act of feeding a solitary young bird in its nest, which, when examined, was found to be the chick of the Bronze Cuckoo of the colonists. It was ludicrous to observe this large and apparently well-fed bird, filling up with its corpulent body the entire nest, receiving daily the sustenance intended for several young Flycatchers."

Not only does the parent Cuckoo shirk all the trouble of hatching its eggs, but the young one is even more callous in its conduct towards its foster parents, for no sooner is it hatched among a brood than it sets to work to kill the rightfully-hatched chicks, throwing the dead bodies contemptuously out of the nest; at the same time the bereft parents have much ado to satisfy the rapacious appetite of this foster interloper.

In New Zealand the clock-like regularity of the appearance and disappearance of the Shining Cuckoo is remarkable. Its sweet plaintive notes are the first harbinger of spring, heard always between the 17th and 21st of September. In the first or second week of January, having devoured the summer caterpillars, it leaves again. Occasionally a stray bird has been seen in the North Island as early as August, and a belated straggler as late as April; but they are only the exceptions that prove the rule peculiar to migratory birds.

According to Buller, this bird has ventriloquistic qualities, for the cry is very remarkable. It consists of eight or ten silvery notes quickly repeated. The first seems to come from a considerable distance, each one following brings the voice nearer till it issues from the spot where the songster is actually perched, perhaps only a few yards away. Then it winds up with a confused strain of joyous notes, and a stretching and quivering of the wings, expressive of the highest delight. The young bird has a very weak plaintive note.

In New Zealand the little Grey Warbler (*Geryzone flaviventris*) is usually the victim chosen for foster parent, but should this source not be immediately practicable, the Shining Cuckoo has no objection to impressing the services of the Black Tit (*Petræca macrocephala*), or a Korimako (*Anthus melanura*). In Western Australia the nests of the *Malurus splendens* are resorted to.

The egg is a clear olive brown, slightly paler at the smaller end; the olive brown can be easily removed by wetting, and will reveal a uniform light bluish shell. Length, eight lines and a-quarter; breadth, six lines.

The female is like the male, except that the bronzy colouring of the upper surfaces is only a wash, and the bars of the under surface are much less distinct.

The young are brown, having the under surfaces grey, without any traces of the bars except on the under surfaces of the shoulders; base of tail, deep rusty red; irides, bright grey; corners of mouth, yellow.

Adult male has head, upper surfaces, and wings, a rich coppery bronze; under surfaces, warm white, with wavy lines and bars of rich bronze; pinions and tail feathers, dull brown, crossed at the tip with darker brown band; tips, irregularly fringed with white; irides, brownish yellow; feet, dark brown.

Habitats: Port Darwin and Port Essington, Gulf of Carpentaria, Cape York, Rockingham Bay, Port Denison, Wide Bay District, Dawson River, Richmond and Clarence River Districts (New South Wales), Interior, Victoria and South Australia, Tasmania, West and South-West Australia, New Zealand. (*Ramsay.*)

CHRYSOCOCCYX BASALIS.

NARROW-BILLED BRONZE CUCKOO. GENUS: CHRYSOCOCCYX.

THIS is a very pretty little bird, so like the Shining Cuckoo that for some time there seemed a possibility of their being confounded together, as their habits of migration are similar; but a close inspection shows that the one under notice has a narrower bill, a lighter brown head, a paler-coloured back, the outer feathers of the tail strongly barred, and the basal portion of the next three feathers on each side a reddish chesnut.

It is universally distributed over Australia from the North-West Territory to South Australia, including Tasmania; the southern parts are visited in summer, the northern parts in winter.

The egg is the same in shape and size as that of the *Lucidus*, but there the similarity ends; in colour it is a fleshy-white, speckled all over with fine pinkish red spots, which become darker by age. Length, eight lines and a-quarter; breadth, six lines.

Mr. A. J. Campbell, in his pamphlet on "Australian Birds," says: "The eggs of *Basalis* and *Plagosus* (*Lucidus*) are totally dissimilar, except in shape and size. Notwithstanding, the birds bear a great similarity—about the same size and colour, only one has a narrower bill and some minor differences on the tail

feathers. Now that the eggs are known* it would be of great interest if some zoologist could explain the anomaly in their characters; for experience teaches us that in every genus of birds the true typical egg of each species is not without characteristic resemblance. The foster parents of the Bronze Cuckoos are generally the *Maluri* and *Acanthizæ*, but I have taken them from the nest of *Petroica multicolor* (Scarlet-Breasted Robin), and they have also been taken from *Petroica Goodenovii* (Red Capped Robin) and *Gerygone*. Rarely two species of Cuckoos deposit eggs in the same nest, but the following is a curious fact: I found the nest of *Acanthiza* (*Geobasileus*) *chrysorrhæa* containing three eggs, besides an egg each of the two Bronze Cuckoos. We are aware that young Cuckoos have the reputation of ousting their foster brothers and sisters, but if these two lively youngsters had been reared in the same nest, we are constrained to imagine that 'when Greek met Greek' then would come the tug-of-war. With reference to parasitic Cuckoos ousting the foster chickens, I do not think this applies in all cases, because if we consider the young Pallid and Fantailed Cuckoos, their rapid growth in size as compared with the foster chick, the latter would soon be crushed and starved out of existence; moreover, the nest could not contain them all. In any case, there appears an all-wise provision of their great Creator for the maintenance of their (the Cuckoo) species, for it may be conceived that it occupies the whole time of a pair of tiny foster parents to satiate the rapacious maw of their large foster chick without being encumbered with a brood of their own offspring."

All the upper surfaces of a bright bronze green; two centre tail feathers, bronze, with olive brown tips; three next rufous brown for three-parts of their length, then olive brown, tipped with white; outside feathers, vandyked on outer web with white; under tail surfaces, regularly barred with brown and white; throat, breast, and abdomen, crossed by broad bars of bronze, increasing in width as they go towards the flanks.

Habitats: Derby (N.W.A.), Port Denison, Wide Bay District, Richmond and Clarence River Districts (New South Wales), Interior, Victoria and South Australia, Tasmania. (*Ramsay*.)

GENUS CHALCITES.

THIS genus is represented by only one species in Australia, which so closely resembles the *Chrysococcyx* that, in the language of simile, the one may be taken as the heavy shadow of the other. The Chalcites is a heavier, more robust bird, and differs in colouring, but that is all.

CHALCITES OSCULANS. (*Gould*)

BLACK-EARED CUCKOO. GENUS: CHALCITES.

ALTHOUGH this Cuckoo seems to prefer the inland country to the coast, and is not known to extend its migrations over seas, it follows the same habits as the *Chrysococcyx* in preferring thick shrubby trees moderately high for its favourite resort. Its food consists of the insects that haunt the leaves and branches, in search of which it hops about with a quiet stealthiness.

Gilbert, who met with this bird in Western Australia, says that it is very shy, and only to be met with inland. It utters a feeble, lengthened, and plaintive note at long intervals. It flies slowly and heavily, and only for short distances. The stomach is thin and capacious, and slightly lined with caterpillar's hairs.

* Dr. Ramsay says that the eggs were known and recorded many years before Mr. Campbell's discovery.

Head, and all upper surfaces, glossy olive brown, darker on shoulders and primaries, fading into white on upper tail coverts; tail, dark olive brown, each feather tipped with white, and the lateral one on each side crossed on the inner web with broad white bars; ear coverts, black, encircled with white; all under surfaces, warm buff, fading into white on under tail coverts; bill, dark brown; irides, blackish brown; tarsi, greenish grey.

Total length, seven inches and a-half.

Habitats: Derby, N.W.A.; Gulf of Carpentaria, New South Wales, Interior, Victoria and South Australia, West and South-West Australia. (*Ramsay.*)



a. CHRYSOCOCCYX BASALIS
Narrow-billed Bronze Cuckoo (Blyth)

b. CHRYSOCOCCYX LUCIDUS
Bronze Cuckoo (Gould)

c. CHALCITES OSCULANS (Gould)
Black-eared Cuckoo

PLATE I.

ORDER INCESSORES.

SUCH a wide variety of birds are grouped under this order that a long list of mere names would not exhaust even the most prominent species. Australia is rich in examples; this will be evident to the most careless observer of birds when he knows that the shrill and gaudy Parrots, Parrakeets and Cockatoos, so common over the length and breadth of our continent, come under this heading. Such examples as we possess of the Swallow and the Swift also belong to the order, as do the Kingfishers; one member of this tribe, the Laughing Jackass, being known and wondered at wherever the name of Australia is mentioned. The Honey-eaters comprise a multitude of birds, and there is a great variety of others which will be illustrated and commented upon in turn, beginning the list with the world-famous Cuckoos, those genial Communists among birds, of which we have several examples, though none of them possess those two soft notes which in England are the surest herald of oncoming spring.

FAMILY CUCULIDÆ.

MOST of the members of this truly remarkable family have the strange parasitic habit of laying their eggs in the nests of other birds, leaving the process of hatching and rearing to the unfortunate proprietress of the borrowed nest. Australia has several examples of the Cuckoo, varying greatly in size. Though we have not so many varieties as are to be found in Europe, the methods adopted by the Australian birds are almost indetical; nearly all of them have this parasitic habit, and here in the southern hemisphere the bird upon which the strange duty of hatching the Cuckoo's eggs is imposed, submits as tamely as do the northern varieties.

GENUS CUCULUS.

THE one representative which is classed with this genus inhabits the more northerly parts of Australia; it bears the closest resemblance to the European Cuckoo.

CUCULUS CANOROIDES (*Müller*).

AUSTRALIAN CUCKOO. GENUS : CUCULUS.

THOSE who know the common Cuckoo in England will readily recognise this variety as its Australian representative. It is very like it in every particular, excepting that the true note so well known at home is wanting.

The eggs are deposited precisely after the manner of the European Cuckoo, being laid in the nests of other birds, which, obeying a strange law, hatch and nourish the young intruder. The foster-mother is even frequently known to show more care for it than for her own progeny. The Cuckoo always grows up vigorous and most exacting. He demands a full share of whatever food is brought to the nest, and gets it. Not only that—the Cuckoo is frequently the most powerful of the family, and makes himself so thoroughly at home that his weaker brethren often suffer thereby, being frequently thrown out by him before they are able to shift for themselves, and all this without any intervention on the part of the owner of the nest.

The adult birds are ravenous feeders, and this fact, coupled with their fierce appearance, gives them the air of Hawks. They never prey on other birds, however, their food consisting mainly of insects and larvæ.

Upper surfaces, slaty-grey; inner webs of the primaries, white; tail feathers, dark grey-brown, speckled with white on the inner webs and tipped with a lighter shade of grey; throat, grey; all the under surfaces dark buff-colour, with curved markings of black; bill, almost black, bordered with yellow round the base; irides and feet, deep yellow.

Length, 13 inches; bill, $1\frac{1}{4}$ inch; wing, $7\frac{3}{4}$ inches; tail, $6\frac{1}{2}$ inches; tarsi, $\frac{3}{4}$ inch.

Habitats: Northern inland portions of Australia generally.

GENUS CACOMANTIS (*Müller*).

FOUR examples of this genus inhabit principally the more southern parts of Australia; all are parasitic in their habits.

CACOMANTIS PALLIDUS.

PALLID CUCKOO. GENUS : CACOMANTIS.

THIS bird is common over most of the southern parts of Australia. It is met with in Tasmania, but much more seldom, and only in the early part of summer, after which time it migrates thence to Australia. During the winter months many of the birds move northward. It is a noisy bird, gay, and often quarrelsome, and continually makes its whereabouts known, even if not visible itself, by its cry, which is a succession of ringing notes on a rising scale, finishing up with several repetitions of the final note.

Its food consists of insects, which it pursues with great noise and vigour among the trees. Its flight is straight, strong and rapid, never indulging in fancy evolutions on the wing. When not searching after food or engaged in noisy sport among the branches, its favourite resting point is on a high, commanding branch.

The manner of reproduction is after the parasitic manner of most of the Cuckoos. The young, after being carefully tended in the nest, as soon as it is able to move for itself, takes its stand on some convenient branch and is still faithfully ministered to by the foster-parents till fully fledged. The egg is seven-eighths of an inch long by five-eighths broad; it is cream-coloured and is speckled over thickly with brown markings.

Specimens from widely-separated localities show varieties in the markings which have been held by some to warrant a specific distinction being made.

Upper surfaces, dark grey, tinged with brown; under surfaces, grey; wings and tail, darker; inner webs of the primaries, white; tail feathers, edged with white, which is broadest on the outer feathers and narrow on the inner. Down each feather runs a serrated marking of dark grey; irides, brown; ring round the eye, yellow; bill, dark at the tip, streaked with yellow at the base; feet, brownish-yellow.

The female has the upper surfaces lighter brown, and has the wing-coverts tipped with light brown; the fainter markings of the tail are yellow.

Habitats: Tasmania, southern colonies of Australia and lower portions of Queensland.



1 CUCULUS CANOROIDES. (Müller)
Australian Cuckoo.

2 CACOMANTIS PALLIDUS
Pallid Cuckoo.

G.J. Broinowski Fecit

PLATE II.

CACOMANTIS FLABELLIFORMIS.

FAN-TAILED CUCKOO. GENUS: CACOMANTIS.

THIS is the "Doo-Laar" of the aborigines, and to those who have heard its strange call, half ringing and half harsh, the name will recall the cry of the strange solitary bird. It frequents, generally, patches of scrub or thick timber, and is so shy that unless special search is made for it, it is seldom seen.

The food consists, as with most of the other Cuckoos, of larvæ and insects; in its general habits also it resembles other members of the tribe. Its flight is straight and somewhat heavy; on alighting it waves its broad tail slowly up and down several times, and also goes through this movement before taking wing.

This species is migratory; it spends the summer in Tasmania, returning to Australia in January and February.

The single egg is deposited in the nest of some other bird, nearly always in that of a much smaller variety; the young Cuckoo has the same tyrannical way of treading upon and often throwing out the proper tenants of the nest. The egg is a true oval, pale pink in colour, and spotted finely with purplish-brown; it is nine lines long by seven and a half broad.

The female is somewhat smaller than the male, but the colouring of the sexes is precisely similar.

Head and upper surfaces, dark grey; tail, a deeper shade, with a tinge of brown, the feathers having serrated markings of white at the edge, which increase in breadth towards the point; wings, brown, tinged with green; chin, grey; under surfaces, rusty brown, deeper on the chest; bill, black, with a flesh-coloured strip at the base of the lower mandible; irides, brown; eyelash, bright yellow; feet, olive green.

Habitats: Central and Southern Australia. Tasmania.

CACOMANTIS INSPERATUS (*Gould.*)

BRUSH CUCKOO. GENUS: CACOMANTIS.

SEEN apart from the foregoing example, this variety might be easily confounded with it. However, a glance at the two when side by side shows a considerable variation in size and contour, as well as a distinct difference in the tail, that of the present species being more rounded and differently marked.

It is much rarer than the *C. Flabelliformis*, but so far as is known its habits are similar. As the name indicates, it frequents scrub and thickly timbered patches.

Head, upper part of the throat and upper surfaces, dark, rich grey; tail, dark grey, with a tinge of green, each feather with a row of white markings on the inner web, each tipped with white; wings, brown, with green reflections; a white mark on the inner webs of primaries and secondaries; edge of the shoulder, grey; under surfaces, light chestnut, which is deeper on the chest, and greyish on the abdomen; irides, olive; bill, black, with an olive streak at the base of the lower mandible; feet, olive.

Length, $9\frac{1}{2}$ inches; bill, 1 inch; wing, $6\frac{1}{2}$ inches; tail, 5 inches; tarsi, $\frac{2}{3}$ inch.

Habitats: New South Wales, South and West Australia, southern part of Queensland.

CACOMANTIS CASTANEIVENTRIS.

CHESTNUT-BREASTED CUCKOO. GENUS: CACOMANTIS.

THE more northern parts of Queensland and the Northern Territory appear to be the native country of this variety, of the habits of which not much is known. It is, however, in so far as it has been observed, similar in its manner of nidification to those Cuckoos already described. It is slender in form, and its movements and mode of flight are more graceful than is the case with those forms already described.

The whole of the head, chin and upper surfaces, deep purplish-grey; wings, brown, with green lights; tail, dark purplish-grey, all the feathers tipped with white, the inner webs of the lateral feathers barred with greyish streaks; irides, orange; bill and nails, almost black; legs and feet, orange.

Length, $9\frac{1}{2}$ inches; bill, $\frac{7}{8}$ inch; wing, $4\frac{1}{4}$ inches; tail, 5 inches; tarsi, $\frac{1}{4}$ inch.

Habitats: Far northern parts of Australia.



1 CACOMANTIS FLABELLIFORMIS. (Bonap)
Fan-tailed Cuckoo.

2 CACOMANTIS INSUPERATUS (Gould)
Brush Cuckoo

3 CACOMANTIS CASTANEIVENTUS.
Chestnut-breasted Cuckoo.

G. J. Broinowski Fecit

PLATE III.

GENUS SITTELLA (*Swainson*).

THESE birds resemble in many respects the Nuthatches of Europe and India, but differ from them in their mode of nidification, building nests on the branches of trees instead of incubating in holes in the trunks.

SITTELLA PILEATA (*Gould*).

BLACK-CAPPED SITTELLA.

THE range of this Sittella extends over the greater part of South and Western Australia, where it is to be met with in flocks from ten to thirty in number. It is exceedingly shy, and when not flying swiftly from tree to tree, generally remains on the topmost branches.

Gilbert, when in Western Australia, made the following note concerning the *Sittella Pileata*:—"An extremely active bird, running up and down the trunks and branches of the trees with the utmost rapidity, always in families of from ten to twenty in number. It utters a weak, piping note while on the wing, and occasionally while running up and down the trees. Its flight, which is generally performed in rather rapid, undulating starts, is of short duration."

The breeding time is in September. The nest is formed of very small, thin strips of bark joined together by means of cobweb, which is laid on so thickly as to almost cover it. The same substance is used to fasten the structure in its place, usually the highest and most slender fork of an acacia, where its diminutive size and resemblance in colour to the tree render it very difficult of detection. The eggs, three in number, are "of a whitish colour, with circular green spots regularly distributed over the whole surface."

The male has the forehead, stripe over the eye, throat, breast and centre of the abdomen, white; crown of the head, black; ear-coverts, back of the neck and back, brownish-grey; rump, white; tail, black, the centre feathers slightly and the outer ones largely tipped with white; wings, blackish-brown, with a large patch of rufous in the centre, interrupted by the blackish-brown margins of some of the secondaries; flanks and vent, grey; bill, yellow at the base, black at the tip; feet, yellow.

The female is somewhat darker on the upper surface, and has the whole of the upper part of the head deep black.

Total length, $4\frac{3}{4}$ inches; bill, $\frac{7}{8}$ inch; wing, $3\frac{1}{2}$ inches; tail, $1\frac{5}{8}$ inch; tarsi, $\frac{5}{8}$ inch.

Habitat: South and Western Australia.

SITTELLA LEUCOPTERA (*Gould*).

WHITE-WINGED SITTELLA.

DIFFERING from *Sittella Chrysoptera* only in the colouring of the plumage, this may be justly considered the northern representative of that bird. It is found in small families of from four to twelve, principally in the Cobourg Peninsula, though even there not abundant. In general habits and characteristics it is the same as the others belonging to this genus.

The male has the forehead, crown of the head and occiput, deep black; wings, dark brown, with a broad band of white crossing the primaries near the base; tail, black, the lateral feathers tipped with white; throat and under surface, light grey; back, greyish-brown, the centre of each feather streaked with blackish-brown; irides, ochre-yellow; bill, yellow, tipped with black; legs and feet, yellow.

Total length, 4 inches; bill, $\frac{11}{16}$ inch; wing, 3 inches; tail, $1\frac{1}{2}$ inch; tarsi, $\frac{11}{16}$ inch.

Habitat: The north coast of Australia.

SITTELLA LEUCOCEPHALA (*Gould*).

WHITE-HEADED SITTELLA.

SAVE in the plumage, no special characteristics are possessed by this bird to distinguish it from the other *Sittellæ*.

Gould mentions that specimens from Moreton Bay differed slightly in colouring from some procured in the interior during Leichhardt's expedition to Port Essington, but the dissimilarity was not sufficiently great to justify their classification as a new species.

Lower part of the head and neck, white; top of the head, grey; back, grey; each feather has a darker centre; under surface, greyish-white; wings, dark brown, crossed by a band of pale rusty-red; tail, brownish-black, tipped with white; irides, yellow; base of the bill, orange-yellow; feet, bright yellow.

Total length, $4\frac{1}{2}$ inches; bill, $\frac{5}{8}$ inch; wing, $2\frac{3}{4}$ inches; tail, $1\frac{1}{2}$ inch; tarsi, $\frac{1}{2}$ inch.

Habitat: North-east coast and interior.

SITTELLA CHRYSOPTERA (*Swains*).

ORANGE-WINGED SITTELLA.

THERE is scarcely a part of New South Wales in which the Orange-winged Sittella is not found, usually in small groups of from four to eight. It may be seen darting from one tree to another, but further than this the powers of flight are very seldom used. It much prefers to run over the branches and trunks of the trees, which it does with as great ease and swiftness in one position as in another, very often even traversing the trunks head downward.

The top of the head and upper surface are grey, the back having a broad streak of very dark brown down the centre of each feather; wings, brownish-grey, with a patch of rufous crossing the primaries and secondaries; tail, black, tipped with white; throat and lower portion of head, brown; all under surface, grey; bill, horn-colour at base; feet, yellow.

The female differs in having the head and ear-coverts considerably darker.

Habitat: New South Wales.

SITTELLA STRIATA (*Gould*).

STRIATED SITTELLA.

THIS bird is confined principally to the Cape York Peninsula, where great numbers are to be seen, sometimes moving about in small bands of five or six, but generally running along the branches of the large trees like the other *Sittellæ*.

It is an easy matter to procure specimens, as, when one is shot, the remainder come fluttering round and may be killed with the greatest ease.

The whole of the head, neck, throat and breast, black; upper surface pale brown, with a blackish-brown stripe down the centre of each feather; under surface striated in a similar manner, but the streaks are narrower and not so dark, and the edges of the feathers are also lighter, becoming almost white on the centre of the abdomen; primaries, black, with a large spot of white near the base; secondaries, dark brown, margined with pale brown; upper tail-coverts, white; tail, black, tipped with white; circle round the eye, base of bill, legs and feet, yellow; tip of bill, black.

The female has only the crown and nape black, and the striation of the under surface extends from the bill to the vent.

Total length, 4 inches; bill, $\frac{5}{8}$ inch; wing, 3 inches; tail, $1\frac{1}{4}$ inch; tarsi, $\frac{3}{8}$ inch.



G.J. Broinowski Fecit

1 SITTELLA PILEATA. (Gould)
Black-capped Sittella.

2 SITTELLA LEUCOPTERA. (Gould)
White-winged Sittella.

3 SITTELLA LEUCOCEPHALA. (Gould)
White-headed Sittella

4 SITTELLA CHRYSOPTERA. (Swains)
Orange-winged Sittella.

5 SITTELLA STRIATA. (Gould)
Striated Sittella

PLATE IV.

FAMILY CERTHIADÆ.

GENUS CLIMACTERIS (*Temm.*)

ALL the colonies except Tasmania are inhabited by at least one species of this genus. Out of the six known species, four were first described by Gould.

CLIMACTERIS MELANURA (*Gould*).

BLACK-TAILED TREE-CREEPER.

TO Mr. Bynoe belongs the honour of discovering this species on the north coast, thereby proving that the genus is not confined to the southern portions of Australia, as was thought before. It exceeds all its congeners in size, and in colouring has its own characteristic markings, particularly the lanceolate feathers on the throat, and the black tail.

Owing to the habitat of this bird being restricted to the northern coast, it has been impossible to gather any information concerning its habits; but in all probability they do not differ widely from those of the other species.

The forehead, all the upper surface, and the tail feathers, velvety brownish-black; the occiput and back of the neck stained with ferruginous-brown; primaries and secondaries, dark brown at the base and at the tip, the intermediate space buff, forming a conspicuous band across the wing when expanded; feathers of the throat, white, edged all round with black, giving the throat a striated appearance; abdomen and flanks, ferruginous-brown; bill and feet, black.

Total length, $6\frac{3}{4}$ inches; bill, $\frac{7}{8}$ inch; wing, 4 inches; tail, 3 inches; tarsi, 1 inch.

Habitat: North coast.

CLIMACTERIS LEUCOPHÆA (*Strickl.*)

WHITE-THROATED TREE-CREEPER.

ALTHOUGH the range of *Climacteris Leucophæa* is very much the same as that of *Climacteris Scandens*, they differ widely in the character of the country which they frequent, the former being rarely found in open forest country on the lofty Eucalypti so much affected by the latter. Being an essentially arboreal bird, it much prefers thick brushes and trees bordering creeks, especially the Casuarinæ, whose rough bark holds a great variety of insects, its sole food.

It is very doubtful if this bird ever descends to the ground, as it has never been observed to do so, and is supposed to be able to exist without water.

Gould says:—"While traversing the trunks of trees in search of insects, which it does with great facility, it utters a shrill piping cry: in this cry, and indeed in the whole of its actions, it strikingly reminded me of the Common Creeper of Europe (*Certhia Familiaris*), particularly in its manner of ascending the upright trunks of the trees, commencing at the bottom and gradually creeping up the bole to the top, generally in a spiral direction."

The breeding season commences in September and lasts until the beginning of January. A hollow branch or bole of a tree is the receptacle for the nest, which is made of grass, warmly lined with feathers. The eggs, three in number, are "of a dull white, thinly speckled with fine spots of rich brown, and a few larger blotches of the same colour;" they are ten lines long by eight lines broad.

Crown of head, brown, with a black patch in the centre of each feather; back, olive-brown; wings, olive-brown, all the primaries and secondaries crossed in the centre by a dull buff-coloured band; throat and centre of abdomen, white, the latter tinged with buff; tail, grey; bill, black, the lower mandible horn-colour at the base; feet, blackish-brown.

Habitat: All the Continent of Australia, except Western Australia.

GENUS ORTHONYX.

THIS form is confined to Australia, where there are two species.

ORTHONYX SPINICAUDUS (*Temm.*)

SPINE-TAILED ORTHONYX.

THIS is an entirely terrestrial bird found among the brushes of the southern and eastern coasts of Australia, particularly in the Illawarra District, and about the rivers in the northern part of New South Wales, such as the Manning, Macleay and Clarence. It frequents the most retired parts of the forest, where it may be seen running over stones and the fallen trunks of trees, or scratching among decayed leaves in search of the insects on which it feeds. It much resembles the *Gallinaceæ* in the manner of throwing back the earth when scratching.

The nest is a large dome-shaped structure of moss, situated on the side of a slanting rock or large stone; the entrance, which is by a lateral hole at the bottom, being on a level with the earth. The eggs are white and of different sizes.

The male has the crown of the head and upper part of the back greyish-brown, with a mark of black on each feather; lower part of the back and upper tail-coverts, rich rufous-brown; wing-coverts, grey, tipped with black; primaries, black, crossed with grey at the base; apical half of the primaries and tips of the secondaries, brownish-grey; tail, dark brown; sides of the head and neck, grey; throat and chest white, separated from the grey of the sides of the neck by a lunar-shaped mark of deep black; bill and feet, black; irides, hazel.

Habitat: South and east coasts of Australia.

ORTHONYX SPALDINGI (*Rams.*)

SPALDING'S ORTHONYX.

FOR many years it was thought that only one species of this genus existed in Australia, but through the untiring energy and activity of Mr. Spalding a second one was discovered in a dense brush about thirty-five miles inland from Rockingham Bay. Like the *Orthonyx Spinicaudus*, it obtains its food by scratching among the fallen leaves and *débris* in the thickest portions of the scrub.

It assimilates to the *Orthonyx Spinicaudus* in its form and to a great extent in the colouring, but is nearly twice the size.

The whole of the head, cheeks and ear-coverts, the sides of the head, sides and back of the neck, the sides of the chest and the shoulders are black; primaries and outer webs of the secondaries, brown; the rest of the wing, brownish-black, margined with dark brown; chin, throat, chest and under surface, white; flanks, rump and back, olive-brown; tail, blackish-brown; bill, legs and feet, brownish-black.

The female differs in having the centre of the chin, throat and chest a rich, deep rust-red.

Total length, $5\frac{1}{2}$ inches; bill, $\frac{17}{20}$ inch; wing, $4\frac{1}{2}$ inches; tail, $4\frac{1}{10}$ inches; tarsi, $1\frac{4}{5}$ inch.



1 CLIMACTERIS MELANURA (Gould)
Black-tailed Tree-Creeper
3 ORTHONYX SPINICAUDUS (Temm)
Spine-tailed Orthonyx

2 CLIMACTERIS LEUCOPHCEA (Stict)
White-throated Tree-Creeper
4 ORTHONYX SPALDING (Ramsay)
Spalding's Orthonyx

C. J. Broinowski Fecr

PLATE V.

CLIMACTERIS RUF A (*Gould*).

RUFOUS TREE-CREEPER.

IF it were not for the rufous tint pervading all the colouring of this bird, it might easily be mistaken for *Climacteris Scandens*, to which it bears a great resemblance as regards shape and contour.

It is very common in Western Australia, especially in the forests of Eucalypti, upon which trees it seeks for insects, ascending the smooth bark with the greatest ease. It is also, however often to be seen on the ground searching for ants and their larvæ.

When disturbed it utters a shrill and piercing cry, which sounds most weird and strange in the still and silent forest.

During the breeding season it constructs, far down in the hollow of a dead branch, a nest of soft grasses, lined with down, in which three eggs are laid, of a pale salmon-colour, with blotches of reddish-brown thickly distributed over the surface.

The male has the crown of the head, all the upper surface and wings, dark brown; tail, pale brown; line over the eyes, lores, ear-coverts, throat and under surface of the shoulder, rust-brown; chest, rufous-brown, each feather with a stripe of buffy-white, bounded on each side with a line of black, down the centre; the remainder of the under surface deep rust-red, with a line of white down the centre of each feather, this line being lost, however, on the vent and flanks; irides, dark brown; bill and feet, blackish-brown.

Total length, 6 inches; bill, $\frac{7}{8}$ inch; wing, $3\frac{1}{2}$ inches; tail, $2\frac{5}{8}$ inches; tarsi, $\frac{7}{8}$ inch.

Habitat: Western Australia.

CLIMACTERIS ERYTHROPS (*Gould*).

RED-EYEBROWED TREE-CREEPER.

THE most remarkable fact connected with this species is the reversion, in its case, of the general law by which the male has a more beautiful plumage than the female. The same peculiarity is present to a very small extent in both *Climacteris Scandens* and *Climacteris Rufa*, though scarcely noticeable.

Gould first discovered it on the low grassy hills near the Liverpool range, but it is also to be found in other parts of the colony. The habits are very much the same as those of *Climacteris Leucophæa*.

The male has the crown of the head blackish-brown, each feather margined with greyish-brown; lores, and a circle surrounding the eye, reddish-chestnut; back, brown; sides of the neck and lower part of the back, grey; two centre tail feathers grey, the remainder blackish-brown, tip of

with grey; chin, dull white, passing into greyish-brown on the chest; the remainder of the under surface greyish-brown, each feather having a strip of dull white, bounded on either side with black, running down the centre, the lines becoming blended, indistinct, and tinged with buff on the centre of the abdomen; irides, brown; bill and feet, black.

The female has the chestnut marking round the eye much richer, and has on the breast a series of feathers of a rusty red colour, with a broad stripe of dull white down their middles, the stripes appearing to radiate from a common centre.

Total length, 5 inches; bill, $\frac{7}{8}$ inch; wing, $3\frac{1}{2}$ inches; tail, $2\frac{5}{8}$ inch; tarsi, $\frac{3}{4}$ inch.

Habitat: New South Wales.

CLIMACTERIS MELANONOTA (*Gould*).

BLACK-BACKED TREE-CREEPER.

ON the day of his death, during Leichhardt's expedition to Port Essington, Gilbert procured this among other specimens, but had not time to note any particulars of its habits, of which we are therefore in ignorance.

In this species also the female is distinguished from the male by its finer colouring, though not to such an extent as in *Climacteris Erythrops*.

The most distinctive point in its colouring, as compared with the other species, is the very dark back.

Line before and behind the eye, all the upper surface, wings, and tail, dark brownish-black; the base of the primaries, secondaries, and tertiaries, and the under surface of the shoulder, buff; under surface, pale vinous-brown, the feathers of the abdomen, with a stripe of dull white, bounded by black, running down the centre; at the base of the throat several irregular spots of black; under tail-coverts, buff, crossed by bars of black; irides, brown.

In the female the markings of the abdomen are larger and more conspicuous, and the spots at the base of the throat are chestnut instead of black.

Total length, $5\frac{1}{2}$ inches; bill, $\frac{3}{4}$ inch; wing, $3\frac{1}{2}$ inches; tail, $2\frac{1}{4}$ inches; tarsi, $\frac{7}{8}$ inch.

Habitat: North coast of Australia.

CLIMACTERIS SCANDENS (*Temm.*)

BROWN TREE-CREEPER.

THE whole of New South Wales, Victoria, and South Australia is inhabited by the Brown Tree-Creeper. It is to be found chiefly in the open Eucalyptus and Apple-tree country, the latter tree especially being a favourite haunt on account of the numerous insects to which its rough bark affords a hiding-place. Very few insects can escape the notice of this smart little bird, as it not only looks for them on the outside of the branches and trunk, but dives into all the hollow parts of the tree, and also spends much of its time on the ground among fallen logs.

Its flight, which is performed by a skimming motion of the wings, serves to show to great advantage the brown marking of the primaries.

Opinions are greatly divided as to whether this bird subsists without water as many other insectivorous birds do. At all events it very seldom, if ever, resorts to the water-holes.

The breeding season lasts during August and the four following months. Two flesh-coloured eggs, thickly blotched all over with reddish-brown, are laid in a nest composed of opossum hair, deep down in a hollow branch.

The male has the crown of the head blackish-brown; lores, black; line over the eye and throat, dull buff; at the base of the throat a few indistinct blackish-brown spots; all the upper surface brown; primaries, dark brown, all but the first crossed by a broad band of buff; tail, brown; all the under surface greyish-brown, each feather of the chest and abdomen having a stripe of dull white, bounded on either side with black, running down the centre; irides, bill, and feet, blackish-brown.

The female may be distinguished from the male by the spots at the base of the throat being rufous, instead of blackish-brown.

Habitats: South Australia, Victoria, and New South Wales.



G. J. Brinowski. Fecl.

- 1 CLIMACTERIS RUFA. (Gould)
Rufous Tree-Creeper.
3 CLIMACTERIS MELANONOTA. (Gould)
Black-backed Tree-Creeper.

- 2 CLIMACTERIS ERYTHROPS. (Gould)
Red-eyebrowed Tree-Creeper.
4 CLIMACTERIS SCANDENS. (Temm)
Brown Tree-Creeper.

